2017

RECOMMENDATIONS REPORT

NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN

THE CITY OF ALPHARETTA GEORGIA

Johns Creek GEORGIA *be the exception*

MILTON EST 2006

CITY OF MOUNTAIN PARK

Roswell georgia

SANDY SPRINGS GEORGIA

ARC ATLANTA REGIONAL COMMISSION

Kimley»Horn

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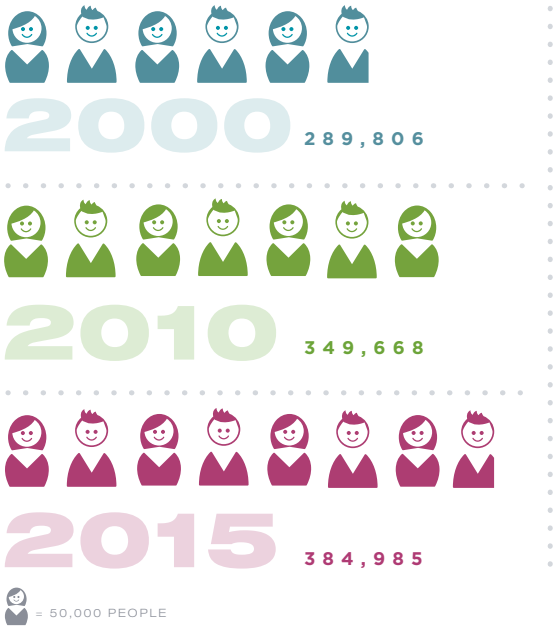
INTRODUCTION

The North Fulton Comprehensive Transportation Plan (NFCTP) seeks to address economic prosperity, quality of life, and cross-jurisdictional collaboration through a variety of transportation solutions, including roadway, bicycle, pedestrian, and transit. An update to the initial CTP completed in 2010, this plan is a joint effort between the Atlanta Regional Commission (ARC) and the six North Fulton cities: Alpharetta, Johns Creek, Milton, Mountain Park, Roswell, and Sandy Springs. The NFCTP provides an opportunity for the municipalities to plan together while informing the regional transportation planning process. The NFCTP ultimately establishes a vision for North Fulton's transportation future.

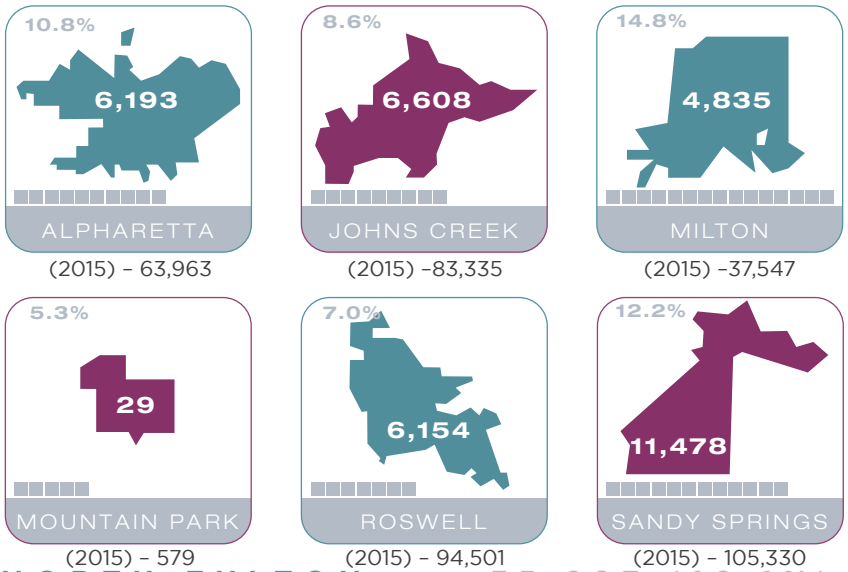
The North Fulton area is experiencing a period of growth and change. Between 2010 and 2015, the population in the area grew by more than 35,000, an increase of over 10%. During the same time period, the 10-county Atlanta Region grew at a rate of just under 9%. Similarly, between 2009 and 2014, the North Fulton area grew to represent a total of 34% of Fulton County's employment, an increase of 17%. This growth, coupled with growth in other areas of the metropolitan region, has led to added pressure on the transportation network. The NFCTP explores these changes and the strategies needed to address them.

POPULATION GROWTH (2000-2015)



Source: U.S. Census

POPULATION GROWTH FROM 2010-2015 (BY CITY)



NORTH FULTON : Δ 35,297 (10.1%)

ATLANTA REGION : Δ379,230 (8.9%)

The NFCTP represents a collaborative effort to establish a transportation vision for North Fulton County that leverages a combination of technical analyses, public engagement, and committee involvement. The plan responds to existing needs and anticipated concerns for quality of life, mobility, congestion, safety, access, and connectivity. Designed to begin an open dialogue among the larger community, the NFCTP aims to create an adaptable plan for the future.

The update to the NFCTP is well-positioned to take advantage of recent regional, state, and federal legislative changes. Through federal legislation, such as the Fixing America's Surface Transportation Act (FAST Act), and state legislation, such as the Transportation Funding Act of 2015 (TFA), there is a more refined understanding of future levels of federal and state funding. Local funding gathered through the Fulton County Special Purpose Local Option Sales Tax for transportation purposes (TSPLOST) will provide a reliable and significant funding source for the next five years. The NFCTP explores the types of projects that can be advanced with these funding sources, as well as how best to prioritize and implement those projects.

PLAN ORGANIZATION

Transportation has long been a driving force behind economic and population growth in North Fulton. Today more than ever, citizens, elected officials, staff, and community stakeholders must work together to plan a transportation system that guides growth in a way that empowers the local economy and enhances quality of life. The NFCTP blends the area's vision for transportation, a review of existing conditions, and future needs with a realistic set of priorities, recommendations, and supporting policies. The following describes the chapters and the content included in each.

Chapter 2 – Project Vision and Goals

Chapter 2 introduces the planning process, outlines the vision and goals for the plan, and documents public engagement efforts.

Chapter 3 – Project Development and Evaluation

Chapter 3 outlines the full universe of projects identified through the NFCTP and introduces a mode neutral project evaluation process based on project scale.

Chapter 4 – Transportation Funding and Level Structure

Chapter 4 explains transportation funding in North Fulton and how it can be leveraged through the establishment of project priority levels.

Chapter 5 – Policy Guidance

Chapter 5 explores the supporting policies that can help to advance the recommendations of the NFCTP.

Chapter 6 – Priority Projects for North Fulton

Chapter 6 provides an inventory of the committed Level 1 projects and the prioritized Level 2 and Level 3 recommended projects.

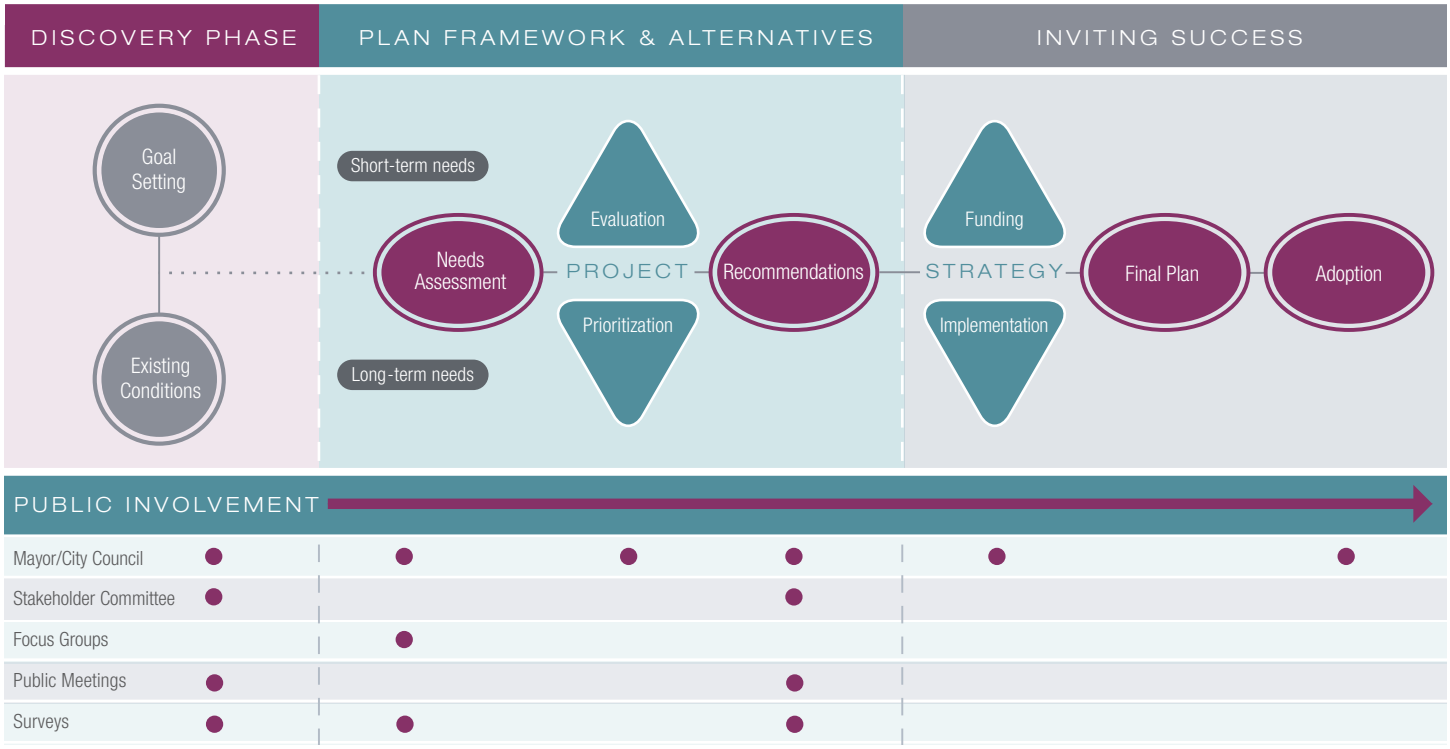
Chapter 7 – Action Plan

Chapter 7 provides an action plan for leveraging the NFCTP to move high priority recommendations forward during the next five years and beyond.

2 VISION AND GOALS

SCHEDULE

The NFCTP embraces a planning process that prioritizes community-level input to the regional role and strategy of the plan. The plan responds to existing needs and anticipated concerns to address community values. The chart below describes how the plan's elements (Existing Conditions, Needs Assessment, Project Recommendations, and Final Plan) were integrated with public outreach efforts. The NFCTP outreach approach offers a variety of methods for the community to engage and provide input throughout the duration of the plan (Summer 2016 to Winter 2017).



VISION AND GOALS

The transportation priorities for the NFCTP reflect the community's vision for a future transportation system as well as the planning factors from the Federal FAST Act, ARC's Regional Plan, and the Georgia Department of Transportation's (GDOT) Statewide Transportation Plan. The guiding principles below help identify ways to prioritize potential recommendations. The NFCTP's priorities were further vetted to include supporting statements to clarify the vision for the plan. Combined, the statements outline strategies that guide the NFCTP planning process.

PUBLIC ENGAGEMENT

Public outreach—whether through direct engagement or by the input of community proxies—is an important part of a successful transportation plan. The objective of engagement for the NFCTP was to offer a flexible, community-focused process and a variety of methods for public input. The menu of participatory opportunities ensured that the plan could truly reflect the values and priorities of North Fulton County.

PROJECT COMMITTEES

Stakeholder Committee

- FIRST MEETING – FALL 2016
- 50 STAKEHOLDERS INVITED
- 30 ATTENDED

PUBLIC WORKSHOPS

2 ROUNDS OF 5 PUBLIC WORKSHOPS HELD AT EACH OF THE MAJOR CITIES

*MOUNTAIN PARK INCLUDED IN SECOND ROUND OF WORKSHOPS

FOCUS GROUPS

5 ROUNDS OF MEETINGS HELD WITH LOCAL GROUPS & STAKEHOLDERS ACROSS THE 6 CITIES TO TALK ABOUT THEIR **VISION FOR TRANSPORTATION IN NORTH FULTON** AND DISCUSS MUCH NEEDED MULTIMODAL IMPROVEMENTS

PHONE SURVEY

CONDUCTED STATISTICALLY VALID SURVEY ACROSS NORTH FULTON

- 1000 COMPLETED SURVEYS
- 50/50 CELL PHONE AND LANDLINE SPLIT

ONLINE SURVEYS (2)

Responses

HELLO

1,807

Written Comments

2,116

Places Needing Improvement

3,130

- 1,484 roadway
- 801 transit
- 845 active transportation

Individual Data Points

11,365

PROJECT WEBSITE

MAINTAINED FOR THE **PLAN** WITH A PROJECT SUMMARY, RESOURCES, FAQS, AND SEVERAL HELPFUL LINKS

COMMUNITY EVENTS

5 COMMUNITY EVENTS TO "MEET THE PEOPLE WHERE THEY ARE"

- ALIVE IN ROSWELL
- ALPHARETTA SCARECROW FESTIVAL
- CRABAPPLE FESTIVAL
- JOHNS CREEK ARTS FESTIVAL
- SANDY SPRINGS FARMERS MARKET

Outreach tools for the NFCTP included the following:

- **Public meetings**
- **Focus group meetings**
- **Online survey**
- **Phone survey**
- **Email blasts**
- **Project website**
- **Social media (by Cities)**

Public Meetings

Five of the major cities that make up North Fulton underwent two rounds of public meetings. The first round occurred at the end of September 2016, and the second round occurred at the end of August 2017. Mountain Park, the sixth city that makes up North Fulton, had one public meeting on October 23, 2017*. These public meetings provided the North Fulton residents with the opportunity to meet the project team and offer feedback throughout the process. The input gathered helped to guide the project team's prioritization of the plan's vision and goals as well as the multimodal transportation recommendations.

Focus Group Meetings

To conduct a more thorough discussion of the public input, focus groups were held to obtain feedback from various groups representing different interests in the North Fulton community. Below are the dates and times of each focus group:

- **Business and Medical Focus Group**
  February 28, 2017
- **Multimodal Summit**
  (Bicycle, Pedestrian, Transit)
  March 1, 2017
- **Cultural and Diversity**
  March 14, 2017
- **Youth and Educators**
  (conducted as a concurrent meeting)
  April 29, 2017

MetroQuest Online Survey

Two MetroQuest online surveys were conducted concurrently with both rounds of public meetings. The first round of the online questionnaire and interactive map allowed participants to provide responses on the guiding principles and comment on location-specific areas of transportation need with a map marker. The second round of the online questionnaire and interactive maps allowed participants to provide input on the funding exercises and various recommended projects. The survey generated responses, written comments, and individual data points.

Phone Survey

A statistically valid telephone survey (50% landlines, 50% cell phones) was completed in February 2017 with residents of Alpharetta, Johns Creek, Milton, Roswell, and Sandy Springs. Two hundred interviews were completed in each city, for a total of 1,000 completed surveys. City results were weighted by age to ensure the respondents accurately represent each city's population. Total results are weighted by age and city population to ensure respondents were representative of North Fulton.

Project Website

The NFCTP project website (http://northfultonctp.com) was maintained for the duration of the study. The site provided relevant maps, documents, and meeting materials as well as an update of events for members of the public to stay informed on the project's process. The website also provided a link to subscribe to the NFCTP mailing list, through which the project team disseminated reminders about major project milestones and events.

Social Media (By Cities)

Each of the cities also maintained their individual social media platforms to advertise whenever the plan had a major event. These updates included posts to all major social media platforms, including Twitter, Facebook, and Instagram using the #NFCTP2017 hashtag.

STAKEHOLDER ENGAGEMENT

A group of key stakeholders were selected to aid in the public outreach process. Many of these individuals brought a wide variety of local knowledge and technical expertise to the project team, especially regarding concerns and opportunities unique to certain areas of North Fulton. There were two rounds of public meetings where the stakeholders attended committee meetings to understand the outreach material before it was presented to the general public. The 40 stakeholders shaped the public activities and provided valuable input. There were 20 city-appointed representatives proportional by population. The remaining 20 stakeholders were considered at-large and represented the following agencies:

- Atlanta-Fulton County Emergency Management Agency (AFCEMA)
- Bicycle Alpharetta
- Bicycle Roswell
- Chattahoochee River National Recreational Area
- Fulton County Division of Aging Services
- Fulton County Schools
- Georgia Commute Options
- Georgia Department of Transportation (GDOT) – District 7
- GDOT – Office of Planning
- Georgia State University, Perimeter College
- Georgia Regional Transportation Authority (GRTA)
- Gwinnett Technical College, Alpharetta-North Fulton Campus
- Metropolitan Atlanta Rapid Transit Authority (MARTA) Office of Planning
- North Fulton Community Improvement District (CID)
- Perimeter CIDs
- Roswell, Inc.
- Sandy Springs/Perimeter Chamber of Commerce
- North Fulton Chamber of Commerce

3 PROJECT DEVELOPMENT AND EVALUATION

INTRODUCTION

It is no surprise that there is a gap between projected funding and the cost to plan, design, and construct all of the projects that were identified as needs in the NFCTP. Only a portion of the needs identified in this plan can be addressed with the remainder to be considered and reevaluated in future plans. Determining project priority required the identification of several criteria, based on significant input from stakeholders and a thorough evaluation of available data. Each of the evaluation criteria addresses one or more of GDOT, ARC, and FAST Act's planning factors as well as one or more of the NFCTP goals described in Chapter 2. This chapter describes the development of the evaluation criteria and the subsequent evaluation of the full universe of projects.

The Universe of Projects

The full universe of projects considered for inclusion in the NFCTP covers a variety of project types and was compiled through various review of local, regional, and statewide initiatives. Beyond projects created through the Needs Assessment, the remainder of the projects were identified through a variety of sources including stakeholder and community input and previous planning efforts.

Evaluation Criteria

To most accurately account for the benefits and challenges of projects of varying scales, unique prioritization processes were developed for community-level and regional-level projects. Community-level projects generally describe those that were city-specific and have a small-to-medium impact on local transportation infrastructure. Regional-level projects describe cross-jurisdictional projects or those that significantly impact the network in North Fulton. Mega-regional projects, projects with statewide or regional agency sponsorship, also were included in the project universe, but were not evaluated in this process. Their exclusion is not a reflection of a lack of interest or level of importance. Rather, the exclusion of these projects recognized that they are likely to be funded through mechanisms outside of the control of the North Fulton cities. Each of the evaluation criteria are displayed on the table below.

	Evaluation Criterion	Definition	NFCTP 2017 Goals
A	Connects to Existing/ Planned Facilities	The project connects to or fills in gaps within a multimodal network.	Multimodal, Quality of Life, Economic Vitality
B	Serves Community Activity Centers	The project provides connections to civic uses, including but not limited to, schools, parks, trails, etc.	Mobility, Quality of Life, Economic Vitality
C	Safety Improvement	The project includes a location or locations that have been identified as having safety concerns.	Safety
D	Natural Environment	The project has limited impacts to sensitive natural environmental features	Environment
E	Growth Center	The project is located in or in proximity to a development node.	Quality of Life, Economic Vitality, Land Use and Transportation Integration
F (Option 1)	Complete Streets (used for non-roadway, non-capacity, non-new roadway projects)	The project offers multimodal options.	Mobility, Multimodal Options, Quality of Life, Economic Vitality
F (Option 2)	Efficiency (used for roadway projects related to capacity and new roadway locations)	The project leads to a network reduction of Vehicle Hours Traveled divided by Vehicles Miles Traveled.	Safety, Mobility, System Preservation
G	Supportive of Alternate Modal Priorities	The project increases alternative mode travel sheds in underserved areas.	Multimodal, Mobility, Quality of Life, Land Use and Transportation Integration
H	Maximize Existing Infrastructure	The project maximizes use of existing infrastructure by optimizing system reliability and balancing supportive enhancements.	Safety, Mobility, System Preservation

4 TRANSPORTATION FUNDING AND LEVEL STRUCTURE

INTRODUCTION

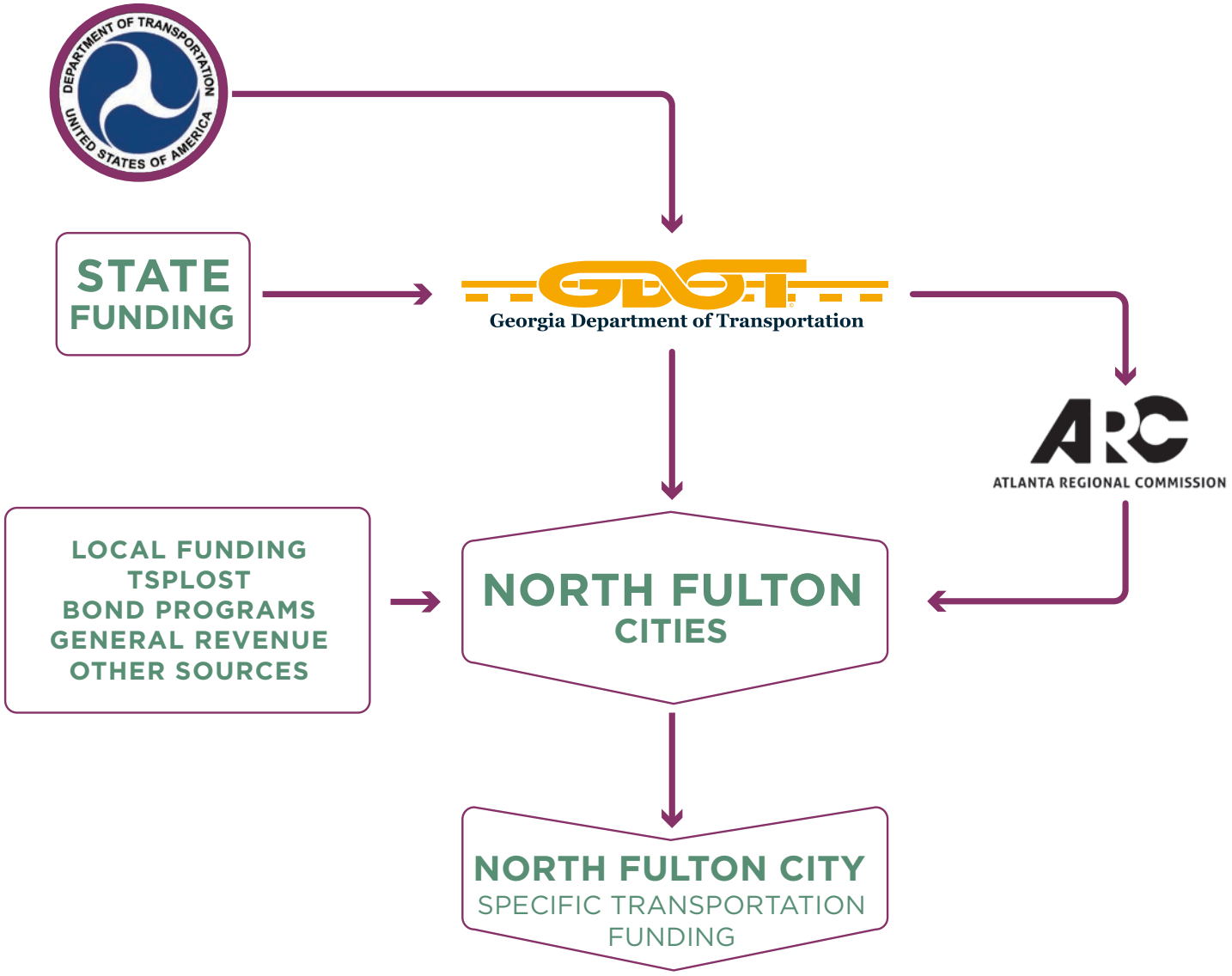
The ARC offers financial assistance to counties and associated municipalities to conduct long-range transportation planning through its Comprehensive Transportation Plan program. As an effort to streamline the regional transportation planning process, CTPs, like the NFCTP, ultimately result in a prioritized list of transportation investments that support local community visions and can be considered for inclusion in the Regional Transportation Plan (RTP).

The plan's recommendations, included in Chapter 6, were created in a variety of ways including a robust community engagement process, an identification of needs and deficiencies across the transportation system, and a thorough review of previous planning efforts. These projects and programs were then prioritized and financially constrained. Ensuring that these steps are taken to move proposed projects into implementation is a crucial step in long-range transportation planning because of the limited availability of funding for projects. The core of the financially-constrained plan is the ability to pair a reasonable expectation of future funding levels with a series of estimated project costs and to maintain consistent assumptions across all travel modes. This chapter discusses the process used to determine the financial constraints including estimated revenues.

FUNDING SOURCES

Transportation funding in North Fulton comes from a variety of sources including federal, state, and local programs. Typical sources include the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), local county revenues and bond programs, and other partnerships with cities and Community Improvement Districts (CIDs). State transportation funding depends largely on the state motor fuel tax but also includes other sources such as hotel lodging, alternative fuel and heavy vehicle taxes, and the general fund. Both GDOT and ARC have programming authority over federal funds distributed to metro Atlanta counties and cities. GDOT programs some of the funding categories while ARC programs others. Georgia's State Transportation Board governs over state funding priorities.

On November 8, 2016, Fulton County residents voted to approve on a 0.75-cent TSPLOST that is projected to result in approximately $380 million for North Fulton cities from 2017 through 2022. This will continue to be a valuable local funding source for North Fulton transportation through year 2022.



FUNDING NFCTP 2017

Funding constraint within a CTP process can be done either by local funding or by overall funding (local, state, and federal combined). Because local match is such an important part of project implementation, the team focused primarily on local funding as the constraining component with a check of historic state and federal matches as a supplement to the analysis.

Project funding for the CTP was broken out into three possible levels. The first level aligns with the current TSPLOST within North Fulton County for the 2017-2022 period. A conservative estimate was made to assume an amount equivalent to two additional iterations of the TSPLOST program through the year 2040. A conservative approach was taken recognizing that future TSPLOST referenda are not certain and opportunities for future transit funding are being discussed.

Current estimates for the TSPLOST program in North Fulton show total revenues at approximately $380 million between 2017-2022. For the purposes of this study, this amount was projected to stay the same for the future, which includes a continuation of the current city-by-city allocation. This is consistent with ARC financial projection models, which assume a continuation of a SPLOST once the referendum has passed. These monies serve as an estimation of local funds available as a match for federal and state funding sources. The federal and state funding sources represent what is currently known by the ARC for the purposes of its Regional Transportation Plan. The NFCTP funding program assume collections equal to 100% of original TSPLOST estimates and the tax amounts collected will likely vary.

Current TSPLOST Revenue Estimates (2017-2022)	
City	**Amount in Millions**
Alpharetta	$62.7
Johns Creek	$82.0
Milton	$37.0
Roswell	$93.0
Sandy Springs	$103.7
Total	**$378.4**

*The City of Mountain Park is not included in this summary table but has an estimated $550,000 for local transportation projects.

CONSTRAINING PROJECT LEVELS

As mentioned in the previous section, local funding in North Fulton was the basis for constraining the project levels. ARC's Regional Transportation Plan and historic North Fulton project-funding levels by GDOT played a fundamental role in creating a realistic, reasonable funding program for the life of the NFCTP (2040). The total available local funding for the plan horizon is $1.135 billion. A total of three project levels were created for the purposes of the NFCTP: **Level 1 • Level 2 • Level 3**

LEVEL 1

(First Level of Priority: 2017-2022; Local funds = $378.4 million)

Level 1 includes all projects that have committed funding in the first five years of the plan, which is consistent with the timeline of the current TSPLOST program (2017-2022). These projects come from different sources including TSPLOST, state- and federally-sponsored projects, multimodal cityspecific bond projects, capital improvement plans, and other city initiatives.

LEVEL 2

(Second Level of Priority; Local funds = $378.4 million)

Level 2 projects for the NFCTP are the next level of priority after Level 1 is implemented. Flexibility is built into the second tier of projects so that as funding becomes available, the North Fulton Cities have a list of projects that have been vetted by staff, the public, and elected leadership from which to choose.

LEVEL 3

(Third Level of Priority; Local funds = $378.4 million)

The assumptions for Level 3 are similar to Level 2. Projects in this level are also priority projects but follow Level 2 for funding allocation.

Total Projected Funding per Level (in millions)

City	Level 1	Level 2	Level 3
Alpharetta	$62.7	$62.7	$62.7
Johns Creek	$82.0	$82.0	$82.0
Milton	$37.0	$37.0	$37.0
Roswell	$93.0	$93.0	$93.0
Sandy Springs	$103.7	$103.7	$103.7
Total	**$378.4**	**$378.4**	**$378.4**

*The City of Mountain Park is not included in this summary table but has an estimated $550,000 for local transportation projects.

LEFT
TURN
SIGNAL

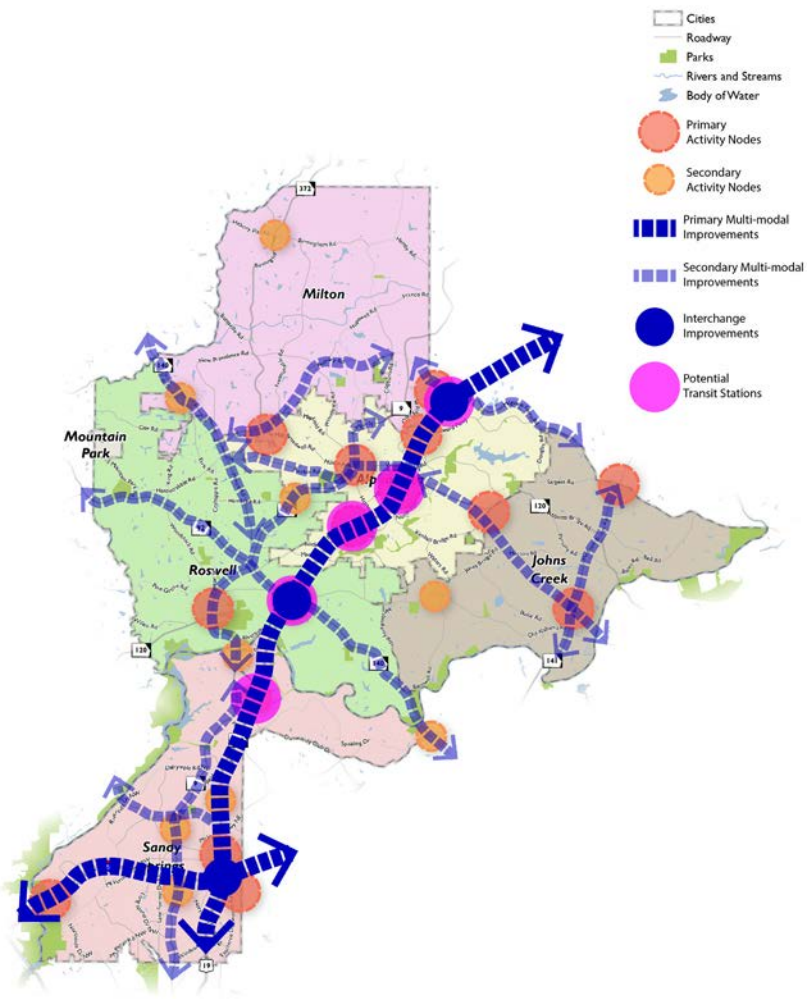
5 POLICY GUIDANCE

INTRODUCTION

Policy coordination amongst government agencies and stakeholder groups (e.g., advocacy, nonprofits, etc.) remains an important charge of the NFCTP. The NFCTP is a living document and will be updated every five-to-seven years as the opportunities for information and resource sharing continue. As collaboration increasingly becomes a shared responsibility for all jurisdictions, this chapter highlights policy recommendations that could prove pivotal for success.

LAND USE AND TRANSPORTATION

To create a transportation network that effectively and efficiently moves people and goods throughout the North Fulton community and beyond, it is important to consider the impact and influence of surrounding land uses. Strategic policies aimed at reconciling various land use patterns that make up North Fulton County with planned transportation infrastructure can help guide and influence demand of these public investments. As identified in the Existing Conditions Assessment, several key corridors will drive mobility and future success in North Fulton. Thus, these corridors and the region's activity centers are the focus of the NFCTP land use recommendations.



Implement A Balanced Approach To Transportation Investments

Investment in transportation infrastructure should hierarchically correspond to the places and destinations the infrastructure serves. As defined in the Existing Conditions Assessment, activity nodes in North Fulton have been classified as primary and secondary, and this designation should be used when determining the level of investment that should be made in the transportation network within and surrounding the area. Additionally, key corridors were identified by the planning team to serve these nodes. These key corridors should be the focus of future transportation investments to ensure that existing and future activity centers can adequately connect to, from, and between one another. Generally, corridors should focus on connecting activity centers, with a focus on limiting access and supporting efficient movement of people and goods, while improvements in activity centers should focus on slowing traffic and providing a multimodal environment. These types of improvements include urban design features and enhancements, such as identity-building landscaping, sidewalks, bicycle amenities, and other streetscaping facilities.

For successful implementation, primary nodes should not only be served by key corridors, but also should be defined by utilizing placemaking practices to create a greater sense of connectivity, walkability, and a valued place. Connectivity and enhancements within activity centers should not be sacrificed at the expense of creating thoroughfares to and through the places people want to be and spend time. Secondary nodes should prioritize connectivity within their activity centers and then focus on connectivity to nearby arterials.

Align Development/Area's Character With Functional Street Classification

The appropriate scale and density of development relative to the available infrastructure. This balance will ensure that the transportation network in North Fulton County and planned investments meet the demands of the activity centers they serve. If not already in place, all North Fulton cities should develop design standards within priority activity centers that encourage and reinforce the symbiotic relationship between the public right-of-way and the places we live, work, and play.

Create Grid Networks Where Appropriate To Enhance Connectivity And Provide For Network Resiliency

A robust network of grid or grid-like streets should be fostered as much as possible, particularly around concentrations of activity and density. This network of connections is not only good for efficient mobility to, through, and around an area, but also enables network resiliency if a corridor or thoroughfare becomes inoperable. Where a grid-like network does not currently exist, new connections should be considered and prioritized as areas redevelop or as new development comes into an area.

Strengthen Bike/Pedestrian Amenities Through Appropriate Land Uses To Provide Multimodal Options and Last Mile Connections

Accessing places and areas through non-vehicular means should become an increased focus of the North Fulton cities. By providing supportive amenities such as bicycle lanes, sidewalks, bicycle racks, bicycle sharing programs, multi-use trails, and other similar facilities, the North Fulton area can provide greater options and serve non-automobile-oriented trips and travel. Aside from amenities, bicycle/pedestrian connections in North Fulton also can be strengthened by encouraging compact mixed-use developments at strategic nodes, which lend themselves to non-vehicular transportation means. These alternative modes not only offer the opportunity to reduce vehicular traffic in the region, but also provide health benefits and recreational opportunities.

Direct Future Growth Through Coordinated Policies And Decision-Making

By actively coordinating land use and transportation policies and decisions, the North Fulton cities can work toward future development patterns that are better served by their transportation networks. This coordination also may help to direct future growth in the North Fulton communities to strategic areas that not only are able to better leverage limited transportation dollars but also serve to help preserve and protect established neighborhoods and vital greenspaces or environmentally-sensitive areas. Each of the cities' comprehensive plans and other guiding documents lay a foundation for building a sustainable and integrated transportation and land use future.

Support A Transit-Oriented Future At Locations Identified In The Fulton County Transit Master Plan

Described later in greater detail, the North Fulton cities should use the Fulton County Transit Master Plan to identify the locations that will be served by transit in the future and to strategically develop those areas to take advantage of likely transit opportunities. It will also be necessary to pair transit recommendations with roadway strategies such as utilizing corridors more efficiently to maximize person throughput on constrained corridors. A sustainable transit system is built from an appropriate mix of uses and densities and can result in more vibrant places and reduced demand as well as congestion along major corridors.

Prioritize Regional Connections

As a major economic hub of the metropolitan Atlanta area, North Fulton cities are a critical component in regional transportation connectivity and vitality. To continue to prosper and support the region, both economically and via transportation-based decisions, North Fulton County should consider overall regional connectivity and travel when investing in major transportation infrastructure. Partnering with ARC, GDOT, and surrounding counties, municipalities, and other jurisdictions will be critical to supporting regional connectivity that is beneficial to all parties.

BICYCLE AND PEDESTRIAN

Introduction

Planning, designing, and implementing high-quality bicycle infrastructure requires the consideration of a variety of different elements – establishing a high-quality bicycle network, considering that target bicycle rider, and identifying the appropriate bicycle facility for the target user. The following bicycle facility implementation guidelines provides considerations for these three elements within the context of one of the transportation priorities identified by residents during the NFCTP-providing Multimodal Options. This transportation priority suggests creating streets that can safely and conveniently accommodate multiple modes of travel and promote an environment where alternative transportation can thrive. Achieving this may require that cities reconsider traditional roadway standards (e.g traditional travel lane widths, posted speeds for major corridors, etc.) to current best practices that facilitate the implementation of truly quality multimodal corridors. Some of the cities already have a policy in place that promotes multimodal enhancements; this toolkit can aid in the decision-making process when deciding what types of facilities are most appropriate.

Establish a High-Quality Bicycle Network

Developing a high-quality bicycle network consider five fundamental elements (1). Considering these five elements through the design and implementation process will be critical to developing a high-quality bicycle network throughout North Fulton.

COHESION

Cohesion is the most elemental of the five requirements yet also the most challenging. A cohesive network has to consider a user's origin and destination points as well as connections to other bicycle networks. The more points the network connects, the more reliable and usable the network can be and the higher the chance people will use the network.

DIRECTNESS

Directness can be viewed in two ways-directness in terms of distance and directness in terms of time. Distance directness is poviding users with the most direct route as possible from their origin to their destination point. Time directness describes routes that allow users to get to their destination in the least amount of time. This considers the directness of the routes as well as the number of interruptions and detours. The more direct a route can be and the quicker users can get from their origin to their destination, which means the network is both more reliable and usable.

SAFETY

Safety can be viewed in five different ways: avoiding conflicts with crossing traffic; separating cyclists from vehicles; reducing speeds at points of conflict; ensuring recognizable bicycle facility types that bicycle users understand and can use with confidence; and ensuring the consistent application of appropriate bicycle and vehicular traffic conflict solutions that are appropriate per roadway type.

COMFORT

Comfort can be viewed in three ways: preventing traffic nuisance by minimizing encounters between vehicles and bicycles; finding destinations; and developing a comprehensive network that is intuitive and allows users to create a clear mental map of the network.

ATTRACTIVENESS

Attractiveness deals with creating an environment that feels welcoming to users through the use of hardscapes, landscapes, signage and wayfinding, lighting, and amenities.

1 H. Talens, et al., "Design manual for bicycle traffic" CROW (2007), The Netherlands.

Consider the User

In addition to understanding the elements of implementing a high-quality bicycle network, it is also important to understand the preferences of existing and potential cyclist. Understanding their preferences associated with safety, comfort, and attractiveness facilitates that development of bicycle infrastructure that may influence their desire to ride. According to a study completed by Portland State University (2), the general population can be organized into four bicycle user groups:

STRONG AND FEARLESS

This group represents 1% of the population and describes cyclists who are comfortable sharing the road with vehicles and do not need bicycle lanes.

CONFIDENT AND ENTHUSED

This group represents 7% of the population and describes bicyclists who are comfortable riding alongside vehicles but need bicycle lanes.

INTERESTED BUT CONCERNED

This group represents 60% of the population and describes users who are interested in biking more but are not very comfortable riding on bicycle lanes, have greater concerns about safety, traffic, and ease, and require protected bicycle infrastructure.

NO WAY, NO HOW

This group represents 33% of the population and describes users who are not interested in riding bicycles.

Based on this study, many agencies and municipalities have focused on developing bicycle infrastructure for the "Interested, But Concerned" group. This group offers the highest potential for increasing the number of people riding bicycles. The criteria mimics Dutch standards for bicycle traffic facilities acceptable to the mainstream population, which attracts male and female shares equally and have high levels of bicycle use for all age groups (3).

Select the Appropriate Bicycle Facility Type

Selecting the appropriate bicycle facility type begins by considering the various types of bicycle facilities used by bicyclist. There are four primary types of bicycle facilities: neighborhood greenways/shared-use streets; bicycle lanes; cycle tracks; and multi-purpose trails. Variations exist within these four primary types of facilities. The following section provides an overview of these facilities. Additional information can be found in engineer and design reference books such as the Federal Highway Administration (FHWA) Separated Bike Lane Planning and Design Guide and the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide. Additional detail on the third element (Selecting the Approrpriate Bicycle Facility Type) can be found in the Technical Appendix.

2 Dill, Jennifer, and Nathan McNeil. "Four Types of Cyclists?." Transportation Research Record: Journal of the Transportation Research Board 2387.1 (2013): 129-138.
3 John Pucher and Lewis Dijkstra, "Making Walking and Cycling Safer: Lessons from Europe," Transportation Quarterly 54, vol. 3 (2000): 25-50.

TRANSIT

Following the approval of the 2017 0.75-cent TSPLOST effort in Fulton County, the Mayors of the 14 cities outside of Atlanta and the Fulton County Commission affirmed that a plan was needed to determine potential expansion of transit services in Fulton County. The Mayors and County approached ARC to help fund and manage the study—the Fulton County Transit Master Plan—a collaboration of Fulton County, ARC MARTA, and the 14 participating cities. The Fulton County Transit Master Plan is in the process of confirming each City's community and economic development strategies, analyzing existing transit services and needs, and developing a financial model to determine the potential for expanded transit services within Fulton County.

This effort also has included a robust public engagement process to understand each community's and the County's transit priorities. For North Fulton County, the following order of priorities has been determined through discussions with community leaders and public input:

North Fulton Transit Priorities

Provide faster, more reliable mobility and mitigate congestion

- Identify transit enhancements and extensions that provide fast, efficient, and reliable service to key destinations
- Prioritize transit services along heavily traveled corridors to reduce highway demand
- Focus investments on frequency of service and improved travel times

Provide greater access to employment centers and destinations

- Identify transit improvements and extensions that better connect Fulton County residents to jobs and economic opportunity
- Prioritize transit services that interconnect existing and emerging Fulton County job centers
- Enhance last-mile connectivity within employment areas and regional destinations

Enhance last-mile connectivity within employment areas and regional destinations

- Identify improvements that enhance transit access and quality of life for seniors, mobility-challenged populations, and by-choice transit users
- Prioritize transit routes and services that provide mobility options for populations with a greater need and likelihood to use transit

Catalyze economic development, investment, and placemaking

- Consider enhancements and extensions that advance economic development, investment, and job growth
- Prioritize transit services in areas that have significant growth and investment potential
- Focus investments in activity centers that mix transit access, jobs, entertainment, and residential uses

Establish a framework for greater regional connectivity

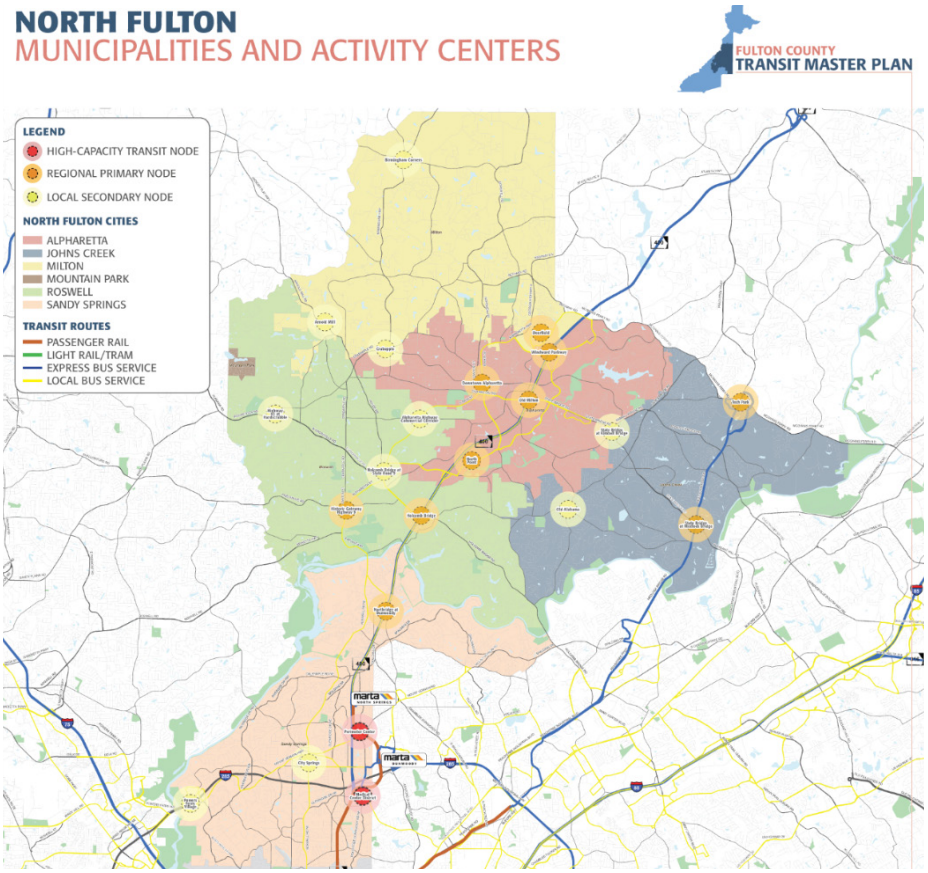
- Identify transit enhancements and extensions that not only meet the needs of Fulton County, but also enhance potential regional connections
- Prioritize transit routes that address critical regional linkages

Maximize the return on investment

- Focus on transit improvements that provide the greatest ridership and alternatives along congested corridors for the dollars invested
- Prioritize transit services that will provide the greatest return on investment within the County

Transit Connections

The transit planning team has also identified and confirmed the major activity centers to connect via future transit investments. The map below illustrates North Fulton's current and planned activity centers, which largely mirror the activity centers defined by the NFCTP.



To connect these activity centers, priority corridors have been identified and the feasibility of corresponding transit mode types have been determined by the transit planning team. Although the transit plan is still in development and undergoing refinement and modifications, the following corridor-to-transit-mode-matches are under consideration. To keep the NFCTP as current as possible, these corridors and transit modes may be revised prior to CTP finalization and adoption.

GA 400/SR-19: Heavy Rail, Light Rail, and/or Bus Rapid Transit

I-285: Light Rail and/or Bus Rapid Transit

Holcomb Bridge Road: Bus Rapid Transit, Frequent Local Bus, and/or Local Bus

Old Milton Parkway: Bus Rapid Transit, Frequent Local Bus, and/or Local Bus

Highway 141: Express Bus, Frequent Local Bus, and/or Local Bus

Roswell Road/Highway 9: Frequent Local Bus and/or Local Bus

Abernathy/Johnson Ferry Roads: Frequent Local Bus and/or Local Bus

Windward Parkway: Local Bus and/or Flex Bus

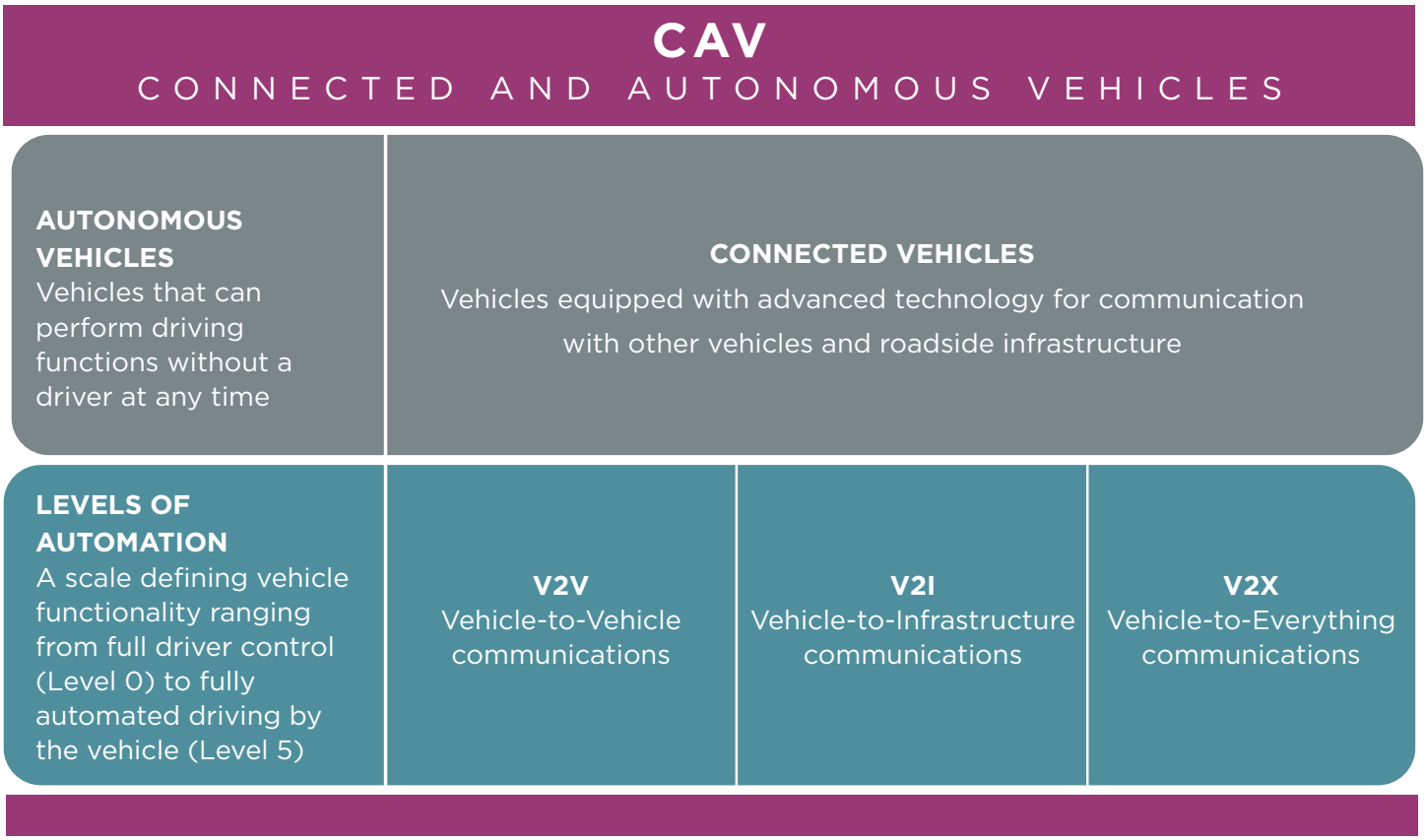
While some Fulton County leaders and stakeholders aspire to consider light rail service along major arterials (e.g., Holcomb Bridge Road and/or Old Milton Parkway), additional time or resources and more aggressive land use policies may be needed to support that level of service in the next 10 to 20 years.

Non-Connection-Based Transit Considerations

In addition to increasing transit connections through fixed route services, North Fulton cities should continue to partner with regional service providers, including MARTA, to improve and enhance local service. This partnership may include enhancing last-mile connectivity through transit means that are city-led as opposed to provider-operated, including shuttle or transit-lite options, as well as providing transit-supportive amenities, such as sidewalks, multi-use paths, or other bicycle-related infrastructure. Additionally, the cities should collaborate with service providers to identify essential short-term improvements to local transit connectivity and operations. For example, as an early result of the Fulton Transit Master Plan, MARTA is establishing a new local service bus route from the Mansell Park-and-Ride to East Holcomb Bridge Road to Spalding Drive. Other modifications to existing service could enhance ridership, create synergy with new development, and improve quality of life for North Fulton residents and workers.

CONNECTED AND AUTONOMOUS VEHICLES

While the impacts of some technological developments are limited to their field, there are others—like the printing press, the telephone, and the computer—that have the capacity to introduce a much more significant impact and transform the lifestyle of a generation. The introduction and advancements of connected and automated vehicles (CAV) is one such development.



As CAV advancements expand daily and are introduced into existing transportation systems, it becomes more challenging for agencies to prepare and plan for these advancements. CAV will introduce changes in the way states and local agencies implement transportation projects and future developments.

With the development and introduction of CAV technologies, the infrastructure, investments, and planning to support CAV's increasing presence will need to be thoroughly strategized for the future. Within each travel mode, there are potential strategies and challenges that can be considered now to help facilitate the eventual incorporation of CAV technologies. In many instances, these planning issues will need to be assessed at a regional level to make their implementation feasible. The North Fulton cities can serve as advocates to encourage consideration of these issues. Future updates to the Comprehensive Transportation Plan should continue and address, where appropriate, CAV and other emerging transportation technologies. A toolkit was created to consider CAV in the CTP process. Please see the report's technical appendix for more information.

ASSET MANAGEMENT

The North Fulton cities and Fulton County have an extensive amount of infrastructure that requires regular maintenance. It includes elements like roadways, bridges, and signal systems. Proper and timely maintenance of such assets allows for a longer lifecycle of use. An important part of asset management includes ensuring that adequate funding is set aside for proper maintenance. This can be accommodated by something as simple as accounting for an operations and maintenance budget for each planned and programmed project.

Pavement Conditions

On roadways that are owned and maintained by the individual North Fulton cities, the cities handle repaving schedules on their own based on available funding. North Fulton maintains a high number of regionally significant roadways. Maintaining and operating the existing roadway system at its highest possible efficiency will be critical to the success and growth of North Fulton. It is recommended that the North Fulton cities work with each other and with GDOT to continue maintaining a database of pavement conditions and ratings, particularly on roadways where funding partnerships (e.g., local maintenance and improvement grant (LMIG) funds) are applicable.

Signals

Currently, North Fulton cities manage signals from separate traffic control centers (TCC). Because of this separation in operation, the NFCTP recommends that the cities properly allocate funding to signal system maintenance and upgrades. Where cross-jurisdictional roadways are concerned, the cities should work together to coordinate and maintain control. During this process, ideas for creating a unified, coordinated TCC for the entire North Fulton County area were discussed. It is recommended that discussions regarding this topic continue particularly as North Fulton continues to grow.

Automated Traffic Signal Performance Measures (ATSPM) help gather high-resolution data from advanced signal controllers and detection devices in the field. ATSPM is a relatively new effort through GDOT to collect data on a regular basis to better regulate, manage, and evaluate the system. Through consistent data collection, the performance metrics alert users when operational changes are necessary. North Fulton cities should coordinate efforts with GDOT to use similar, if not the same, performance metrics to regulate infrastructure.

Bridge Network

According to Transportation For America, about 70,000 bridges across the United States (11% of total highway bridges in the United States) are classified as structurally deficient. These bridges have been noted as needing significant maintenance, rehabilitation, or replacement. There also are bridges that have exceeded an expected 50-year lifecycle. This backlog in maintenance has pushed the mindset of promoting a state of good repair of transportation infrastructure nationwide.

GDOT is responsible for the following bridge maintenance activities:

- **Inspection of all bridges and bridge culverts within a two-year cycle**
- **Underwater bridge inspection every five years**
- **Determination of a bridge's ability to carry a load (load rating)**
- **Routing of permit loads (including superloads)**
- **Assisting counties with solutions to bridge and bridge culvert problems**
- **Design and detail bridge repairs**

During inspection, GDOT measures the rate sufficiency of bridges for structural deficiencies and whether the bridge structure is functionally obsolete. It should be noted that a bridge can be structurally deficient and functionally obsolete and still operate safely for travel if loads and posted vehicle types and weight limits are observed. Bridges with a low sufficiency rating and/or a structural classification should be considered for rehabilitation or replacement and may be eligible for federal funding.

GDOT uses Transportation Asset Management (TAM) principles to guide decision-making for the monitoring and rehabilitation of transportation infrastructure. A good majority of bridge funding comes from the FHWA National Highway Performance Program (NHPP), which consolidates

funding for bridges that lie on the National Highway System. The NHPP mandates specific spending amounts if USDOT-set standards for bridge structures are not met. For bridges that lie in local jurisdictions, LMIG funds can be leveraged to improve bridges among other project types. The North Fulton cities should coordinate with GDOT to leverage state and federal dollars to replace the bridges that are ready for rehabilitation and/or replacement.

RESILIENCY

As extreme weather, sea level change, and changes in environmental conditions threaten transportation investments, the FHWA is working to do the following to better overall system resiliency:

- **Assess network vulnerabilities**
- **Consider resilience in the transportation planning process**
- **Incorporate resilience in asset management plans**
- **Address resilience in project development and design**
- **Optimize operations and maintenance practices**

As an effort to include resiliency in the plan, critical bridge crossings in North Fulton were studied. The plan looked at four strategic Chattahoochee River crossings: I-285, SR 400, SR 140, and SR 141. As part of this analysis, the project team modeled the effects on infrastructure across the metro Atlanta area if each bridge crossing was compromised (details can be found in the technical appendix of the NFCTP Needs Assessment).

At the regional level, the ARC, through a Strategic Highway Research Program 2 (SHRP2) Implementation Assistance Program (IAP) provided through the FHWA, looked at possible futures for Atlanta (e.g., Green Growth, Full Steam Ahead, Technology Reigns, Fierce Headwinds). Although the actual future of Atlanta will include elements from all the possible futures, looking at each one's relation to transportation infrastructure needs can provide valuable insight in creating a well-prepared, adaptable, resilient system. It is important that the North Fulton cities remain active participants in regional initiatives, particularly those that study different transportation alternatives. Staying at the forefront of transportation technologies will allow the cities to better assess network vulnerabilities and incorporate resilience into managing the North Fulton transportation system.

STREETSCAPE AND BEAUTIFICATION

Streetscape and beautification investments play a strategic role in creating and maintaining placemaking in our local communities. Streetscaping can also improve walking conditions, including increased shade for pedestrians. These projects are typically funded by a local jurisdiction's general revenue fund. In the case of North Fulton, a SPLOST can serve as a funding mechanism for this purpose. SPLOST monies, in some cases, can be set aside as a separate funding program—which can be leveraged to address needs that may arise separately from projects that are being implemented. In general, good practice in coordination allows for these types of projects to move forward. Working with planning and zoning departments to leverage both public and private funds to create a transportation-supportive streetscape can promote placemaking in communities. Lastly, remaining intentional with coordination of scheduled maintenance improvements, such as a paving schedule, can be cost-efficient and beneficial.

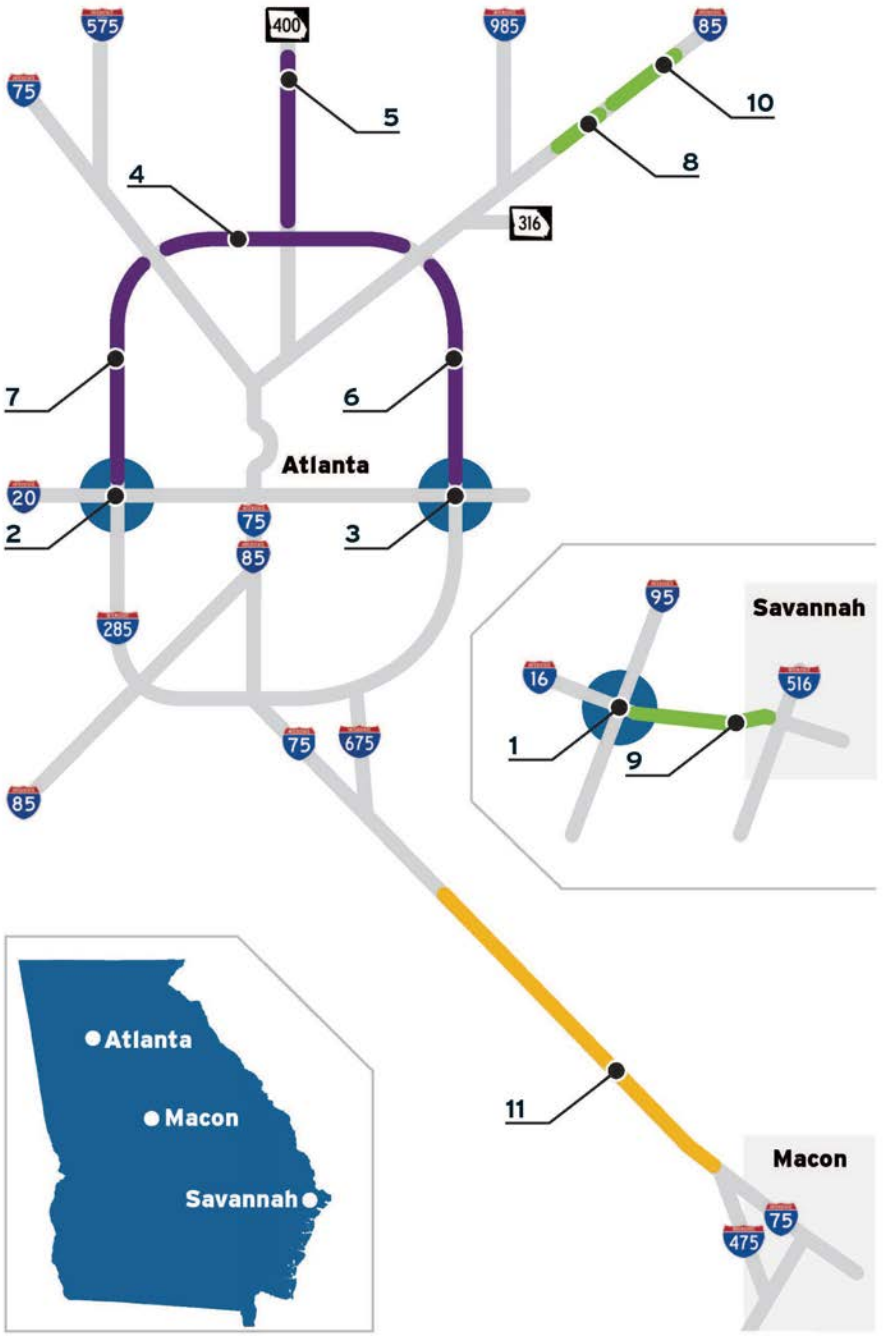
6 PRIORITY PROJECTS FOR NORTH FULTON

INTRODUCTION

The previous chapters introduced the plan's methodology for project evaluation as well as the NFCTP project funding structure. This chapter includes projects and program recommendations that were evaluated based on community-based metrics and went through a rigorous vetting process, including input from City Councils, North Fulton Mayors, stakeholders, and the public, for inclusion in the financially-constrained list. This chapter presents a flexible but prioritized group of projects that indicate the first, second, and third levels of importance. As indicated in Chapter 4, the level-based structure allows a degree of flexibility for North Fulton cities to implement projects despite funding uncertainties.

REGIONALLY SIGNIFICANT PROJECTS THAT AFFECT THE COUNTY

North Fulton roadways support local travel as well as regional and statewide travel. Specifically, major corridors like I-285, GA 400, and SR 9 are part of the regional system which serves the local, regional, and statewide traffic. These roadway facilities generally require higher levels of investment than the North Fulton cities can provide alone. While North Fulton may contribute some funds to strategic corridors, the interstate and state route systems are largely owned and maintained by GDOT. Regional investments include projects such as the Transform 285/400 project, a complete reconstruction of one of the most critical interchanges in North Fulton as well as projects in the Major Mobility Investment Program (MMIP) such as the SR 400 Express Lanes and the Revive 285 Express Lanes projects.



Interchange Reconstruction:

1. **I-16/I-95 Interchange**
2. **I-285/I-20 West Interchange**
3. **I-285/I-20 East Interchange**

Express Lanes:

4. **Revive 285 Express Lanes**
   I-75 to I-85
5. **SR 400 Express Lanes**
   I-285 to McFarland Rd.
6. **I-285 East Wall Express Lanes**
   I-85 to I-20
7. **I-285 West Wall Express Lanes**
   I-20 to I-75

Interstate Widening:

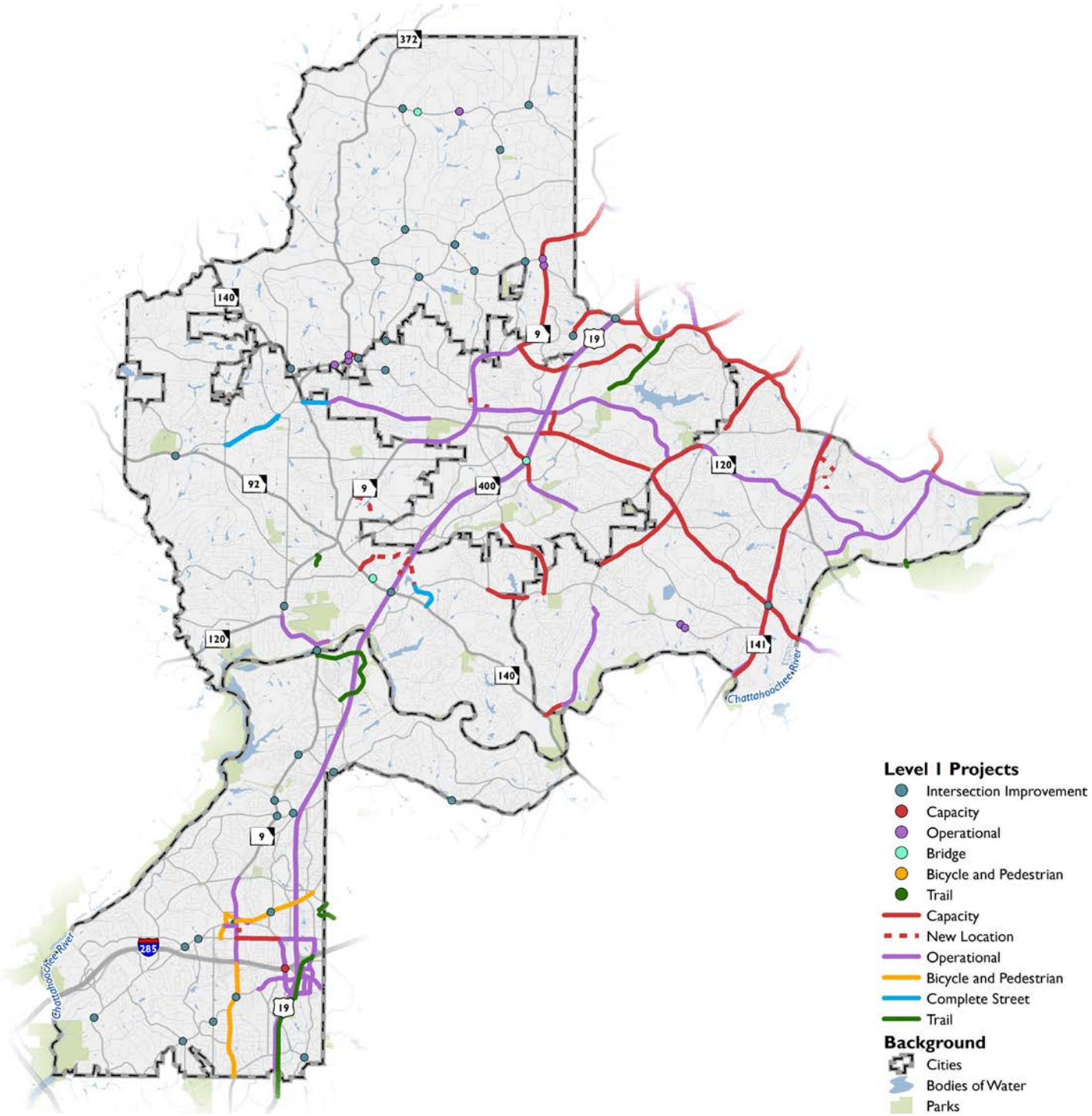
8. **I-85 North Widening**
   Hamilton Mill Rd. to SR 211
9. **I-16 Widening**
   I-95 to I-516
10. **I-85 North Widening**
    SR 211 to US 129

Commercial Vehicle Lanes:

11. **Commercial Vehicle Lanes**
    SR 155 to I-475

LEVEL 1 PROJECTS

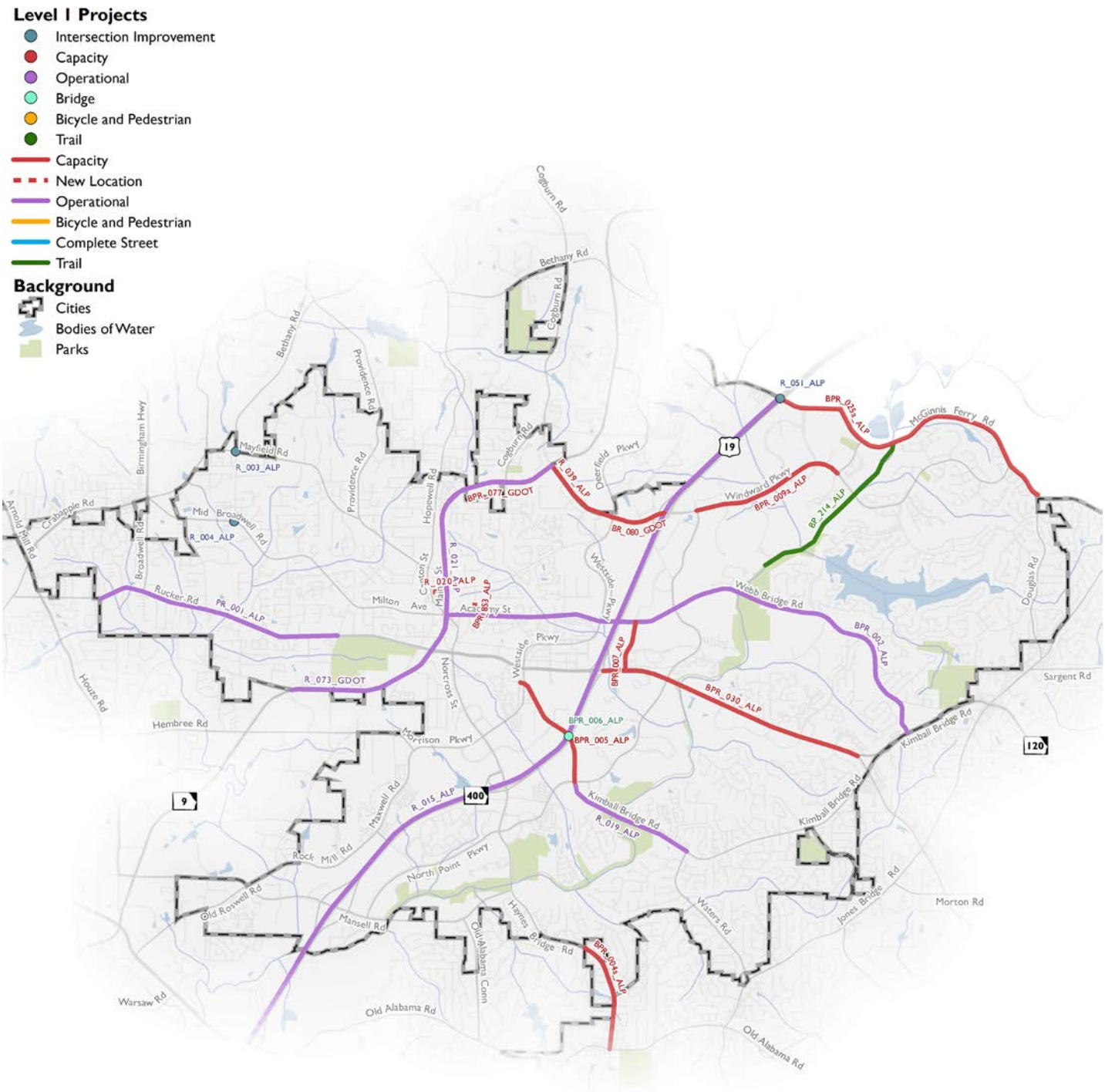
Level 1 projects are those that have committed funding in the first five years of the NFCTP in North Fulton. These projects already have designated funding through the TSPLOST, bond, or city-specific capital improvement programs. The maps on the following pages illustrate all the Level 1 projects with corresponding project identification numbers categorized by project type. More information is provided for each project in the table of Level 1 projects by city.



*The NFCTP did not evaluate mega-regional projects that are sponsored by regional and/or statewide agencies.

For more information about projects sponsored by GDOT, please visit www.garoads.org.

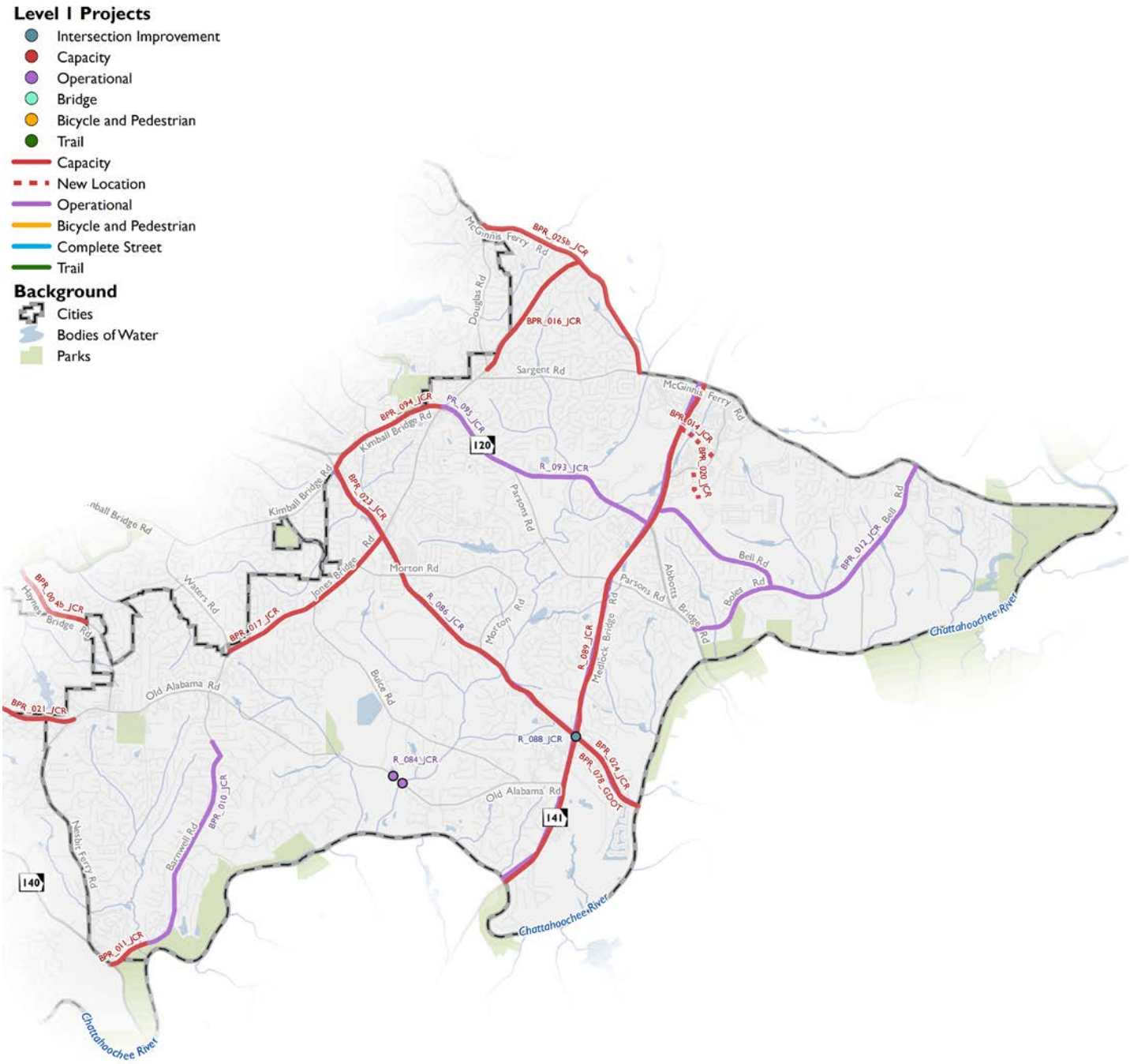
Alpharetta Level 1 Projects



Alpharetta Level 1 Projects

Project ID	Project Name	Cost
CAPACITY		
BPR_004a_ALP	Haynes Bridge Road Capacity Improvements	$5,000,000
BPR_005_ALP	Kimball Bridge Road Bicycle/Pedestrian/Operational Improvements	$4,907,000
BPR_007_ALP	Morris Road Operational Improvements	$2,700,000
BPR_009a_ALP	Windward Parkway Business District/Union Hill Road Capacity Improvements	$15,500,000
BPR_025a_ALP	McGinnis Ferry Road Capacity Improvements	$18,000,000
BPR_030_ALP	Old Milton Parkway Capacity Improvements	$28,000,000
BPR_077_GDOT	SR 9 (North Main Street/Cumming Highway) Widening	$44,685,000
BR_080_GDOT	Windward Parkway Westbound Auxiliary Lane	$5,321,000
R_039_ALP	Windward Parkway Corridor Improvements	$19,748,000
INTERSECTION		
R_003_ALP	Bethany Road at Mayfield Road Intersection Improvements	$1,280,000
R_004_ALP	Bethany Road at Midbroadwell Road Intersection Improvements	$1,280,000
NEW LOCATION		
R_020_ALP	Lily Garden Extension	$1,572,000
OPERATIONAL		
BPR_002_ALP	Academy Street/Webb Bridge Road Operational Improvements	$15,396,000
BPR_006_ALP	Kimball Bridge Road GA 400 Bridge Improvements	$6,500,000
PR_001_ALP	Rucker Road Operational Improvements	$16,700,000
R_002_ALP	Adaptive Traffic Signals/ITS	$1,000,000
R_015_ALP	GA 400 Congestion Relief	$1,000,000
R_019_ALP	Kimball Bridge Road Operational Improvements	$9,000,000
R_021_ALP	Main Street (SR 9): Hembree Road to Windward Parkway Operational Improvements	$56,347,000
R_027_ALP	Alpharetta Milling/Resurfacing	$1,000,000
R_032_ALP	Alpharetta Operational Improvements	$500,000
TRAIL		
BP_002_ALP	Commuter Bicycle Corridor (Path 400)	$1,000,000
BP_214_ALP	Big Creek Greenway Forsyth County Connection	$6,000,000

Johns Creek Level 1 Projects

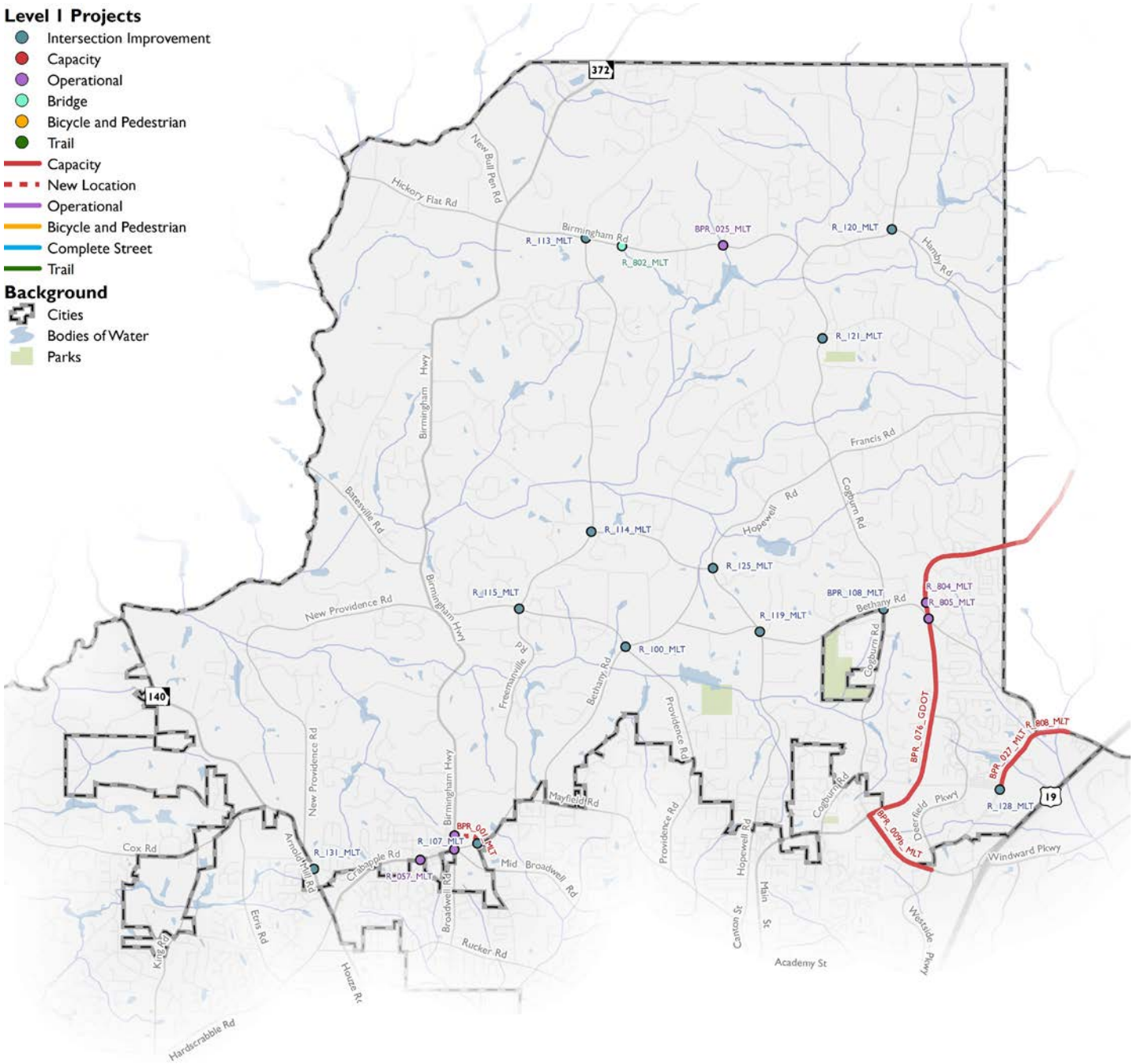


*The NFCTP did not evaluate mega-regional projects that are sponsored by regional and/or statewide agencies. For more information about projects sponsored by GDOT, please visit www.garoads.org.

Johns Creek Level 1 Projects

Project ID	Project Name	Cost
CAPACITY		
BPR_004b_JCR	Haynes Bridge Road Capacity Improvements	$5,000,000
BPR_016_JCR	Jones Bridge Road Widening, Part 1	$7,000,000
BPR_017_JCR	Jones Bridge Road Widening, Part 2	$11,000,000
BPR_021_JCR	Old Alabama Road Widening	$3,000,000
BPR_023_JCR	State Bridge Widening, Part 1	$8,000,000
BPR_024_JCR	State Bridge Widening, Part 2	$4,500,000
BPR_025b_JCR	McGinnis Ferry Road Capacity Improvements	$18,000,000
BPR_078_GDOT	State Bridge Road/Pleasant Hill Road Widening	$46,857,000
BPR_094_JCR	SR 120 (Kimball Bridge Road) Widening	$20,446,000
R_089_JCR	Medlock Bridge Capacity Project (Chattahoochee River to McGinnis Ferry)	$10,000,000
COMPLETE STREETS		
BPRT_013_JCR	Johns Creek Transportation Alternatives	$1,000,000
INTERSECTION		
BPR_011_JCR	Barnwell Road at Holcomb Bridge Road Intersection Improvements	$2,500,000
R_088_JCR	Medlock Bridge at State Bridge Improvements	$8,000,000
NEW LOCATION		
BPR_014_JCR	Findley Road Extension	$7,500,000
BPR_020_JCR	New Location Road from Bell Road to Johns Creek Parkway in Tech Park	$2,500,000
OPERATIONAL		
BPR_010_JCR	Barnwell Road Corridor Improvements	$10,000,000
BPR_012_JCR	Bell/Boles Corridor Operational And Safety Improvements	$7,000,000
PR_095_JCR	SR 120 (Kimball Bridge/Abbotts Bridge Road) Operational And Safety Improvements Including Pedestrian Connectivity	$4,291,000
R_084_JCR	Bridge Replacement	$5,000,000
R_086_JCR	Johns Creek Citywide ITS System Expansion	$1,414,000
R_093_JCR	SR 120 (Abbotts Bridge Road) Operational And Safety Improvements Including Pedestrian Connectivity	$15,000,000
T_001_JCR	Medlock Bridge Transit Related Signal Enhancements	$2,000,000
R_032_ALP	Alpharetta Operational Improvements	$500,000

Milton Level 1 Projects



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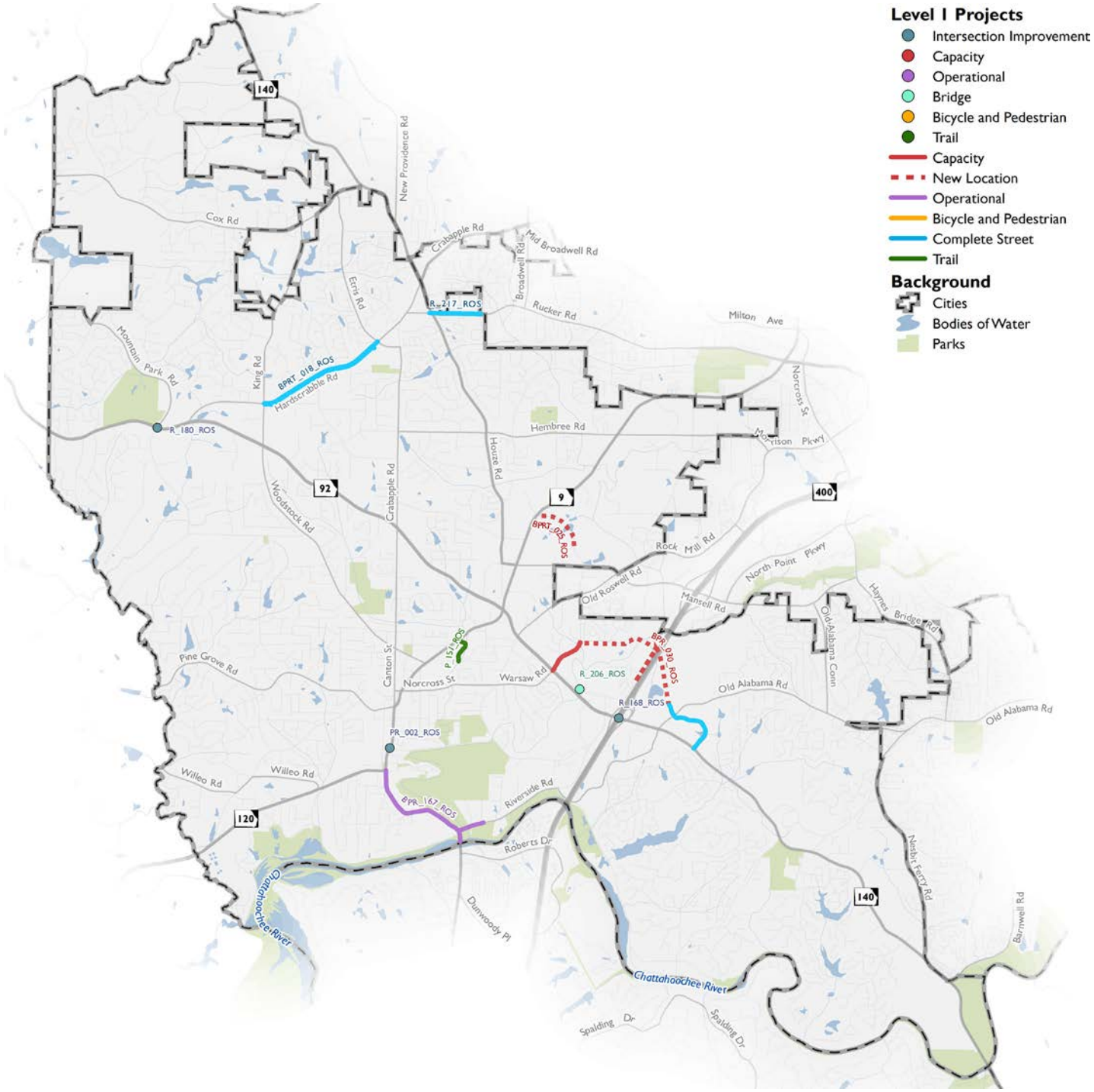
Milton Level 1 Projects

Project ID	Project Name	Cost
CAPACITY		
BPR_009b_MLT	Windward Parkway Business District/Union Hill Road Capacity Improvements	$500,000
BPR_027_MLT	Morris Road Widening	$5,440,000
BPR_076_GDOT	SR 9 (Cumming Highway) Widening	$39,462,000
R_808_MLT	McGinnis Ferry Road Widening	$3,641,000
INTERSECTION		
BPR_108_MLT	Cogburn Road/Bethany Bend Intersection Improvement	$275,000
R_100_MLT	Bethany Road at Providence Road Intersection Improvements	$2,425,000
R_113_MLT	Freemanville Road at Birmingham Road Intersection Improvements	$1,990,000
R_114_MLT	Freemanville Road at Redd Road Intersection Improvements	$1,020,000
R_115_MLT	Freemanville Road at Providence Road Intersection Improvements	$884,000
R_119_MLT	Hopewell Road at Bethany Bend/Way Intersection Improvements	$3,080,000
R_120_MLT	Hopewell Road at Hamby Road Intersection Improvements	$3,420,000
R_121_MLT	Hopewell Road at Thompson Road/South Thompson Road Intersection Improvements	$3,800,000
R_125_MLT	Hopewell Road at Redd Road Intersection Improvements	$951,000
R_128_MLT	Morris Road at Webb Road Intersection Improvements	$500,000
R_131_MLT	SR 140/Arnold Mill Road at Green Road Intersection Improvements	$1,010,000
R_806_MLT	Bethany Bend at McGinnis Ferry Intersection Improvements	$500,000
R_807_MLT	Roundabout at Bethany Bend and Strickland Road	$950,000
NEW LOCATION		
BPR_001_MLT	Crabapple Connector Road New Location	$7,000,000
OPERATIONAL		
BPR_025_MLT	Birmingham Road Bridge (East)	$1,610,000
R_057_MLT	SR 372 (Crabapple Road/Birmingham Highway) Intersection Improvements	$8,000,000
R_802_MLT	Birmingham Road Bridge (West)	$1,000,000
R_804_MLT	SR 9 at Bethany Bend West Operational Improvements	$10,000
R_805_MLT	SR 9 at Bethany Bend East Operational Improvements	$10,000

Roswell Level 1 Projects



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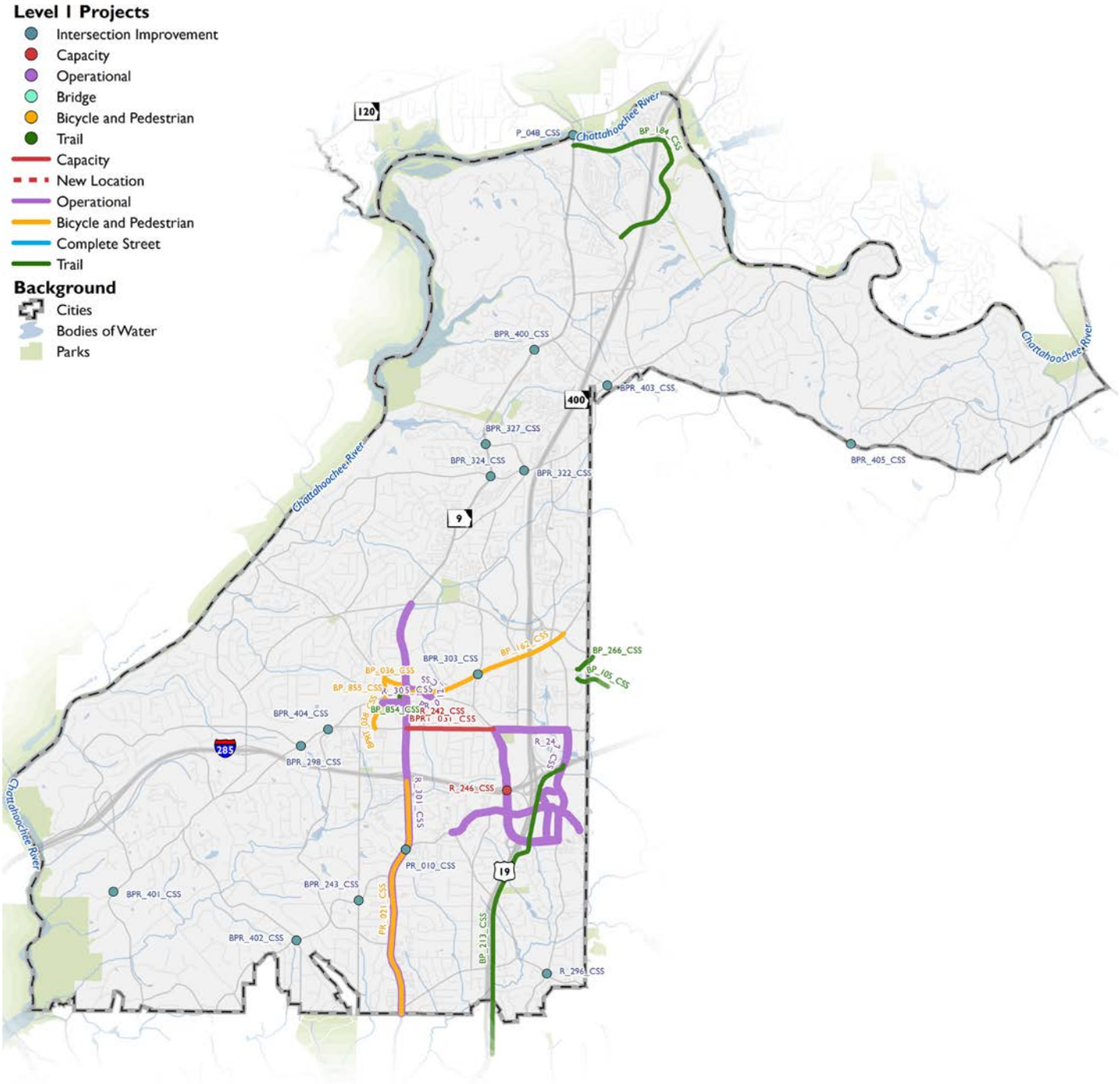
Roswell Level 1 Projects

Project ID	Project Name	Cost
COMPLETE STREETS		
BPRT_018_ROS	Hardscrabble Road Green Loop	$2,789,000
BPRT_025_ROS	Sun Valley Phase 1	$2,673,000
R_217_ROS	Rucker Road Reconstruction	$15,800,000
INTERSECTION		
PR_002_ROS	Oxbo Road/SR 9 Intersection Improvement	$7,000,000
R_168_ROS	Holcomb Bridge Interchange	$6,000,000
R_180_ROS	Woodstock Road (SR 92) at Bowen Road Intersection Improvements	$116,000
R_183_ROS	Intersection and Corridor Improvements	$6,000,000
NEW LOCATION		
BPR_030_ROS	Big Creek Parkway Phase 1 And 2	$58,500,000
OPERATIONAL		
BPR_167_ROS	Historic Gateway (SR 9) Operational Improvements	$24,000,000
R_206_ROS	Old Holcomb Bridge Road Bridge Replacement	$3,086,000
R_218_ROS	Roswell Safety Improvements And Maintenance	$6,956,000
TRAIL		
P_151_ROS	Hog Wallow Creek Trail, Part 1	$170,000

Sandy Springs Level 1 Projects



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Sandy Springs Level 1 Projects

Project ID	Project Name	Cost
BICYCLE AND PEDESTRIAN		
BP_036_CSS	Johnson Ferry Road Sidepath, Part 1	$694,000
BP_162_CSS	Mount Vernon Multimodal Corridor	$11,000,000
BP_266_CSS	Central Parkway Sidewalk Gap	$70,000
BP_855_CSS	Sandy Springs Circle Streetscape, Phase 1	$760,000
BPRT_038_CSS	Sandy Spring Circle Improvements, Phase 2	$6,793,000
BPT_002_CSS	Perimeter Transit Last Mile Connectivity	$7,200,000
BPT_003_CSS	Perimeter Transit Last Mile Connectivity	$500,000
P_048_CSS	SR 9 (Roswell Road/Atlanta Street) Pedestrian Improvements	$3,961,000
PR_021_CSS	Roswell Road Transit Access Project	$7,805,000
CAPACITY		
BPRT_031_CSS	Hammond Drive Phase 1 Efficiency Improvements	$60,000,000
R_246_CSS	Glenridge Drive and I-285 Intersection Improvements	$450,000
INTERSECTION		
BPR_243_CSS	Lake Forrest Drive at Mount Paran Road Operational Improvements	$540,000
BPR_298_CSS	Mount Vernon Highway at Heards Ferry Road (Phase 2) Intersection Improvements	$270,000
BPR_303_CSS	Mount Vernon Highway at Glenridge Drive Intersection Improvements	$255,000
BPR_322_CSS	Spalding Drive at Dalrymple Road/Trowbridge Road Operational Improvements	$1,350,000
BPR_324_CSS	Roswell Road at Dalrymple Road Operational Improvements	$540,000
BPR_327_CSS	Roswell Road at Trowbridge Road Operational Improvements	$1,800,000
BPR_400_CSS	Roswell Road at Grogans Ferry Road Intersection Improvements	$2,700,000
BPR_401_CSS	Riverview Drive at Northside Drive Intersection Improvements	$2,700,000
BPR_402_CSS	Mount Paran Road at Powers Ferry Road Intersection Improvements	$1,800,000
BPR_403_CSS	Spalding Drive at Pitts Road Intersection Improvements	$450,000
BPR_404_CSS	Mount Vernon Highway at Long Island Drive Intersection Improvements	$90,000
BPR_405_CSS	Dunwoody Club Drive at Jett Ferry Road Intersection Improvements	$900,000
PR_101_CSS	Roswell Road at Glenridge Drive Intersection Improvements	$2,587,000
R_296_CSS	Peachtree Dunwoody Road at Windsor Parkway Intersection Improvement	$100,000
NEW LOCATION		
R_242_CSS	Denmark Drive Connector Street New Location	$5,100,000
OPERATIONAL		
PR_012_CSS	Johnson Ferry/Mt. Vernon Efficiency Improvements	$25,649,000
R_247_CSS	Glenridge Drive, Hammond Drive, and Peachtree Dunwoody Road ATMS System Expansion	$1,698,000
R_299_CSS	Sandy Springs Roadway Maintenance and Paving	$18,322,000
R_301_CSS	SR 9 (Roswell Road) - ITS System Expansion/Congestion Reduction and Traffic Flow Improvements	$1,702,000
R_305_CSS	Hilderbrand Drive Streetscape Improvements	$250,000
TRAIL		
BP_105_CSS	Cox Trail	$513,000
BP_184_CSS	Roberts Drive Multi-use Path	$4,950,000
BP_213_CSS	SR 400 Trail System (PATH 400)	$4,950,000
BP_854_CSS	Mt. Vernon Highway Trail	$471,000

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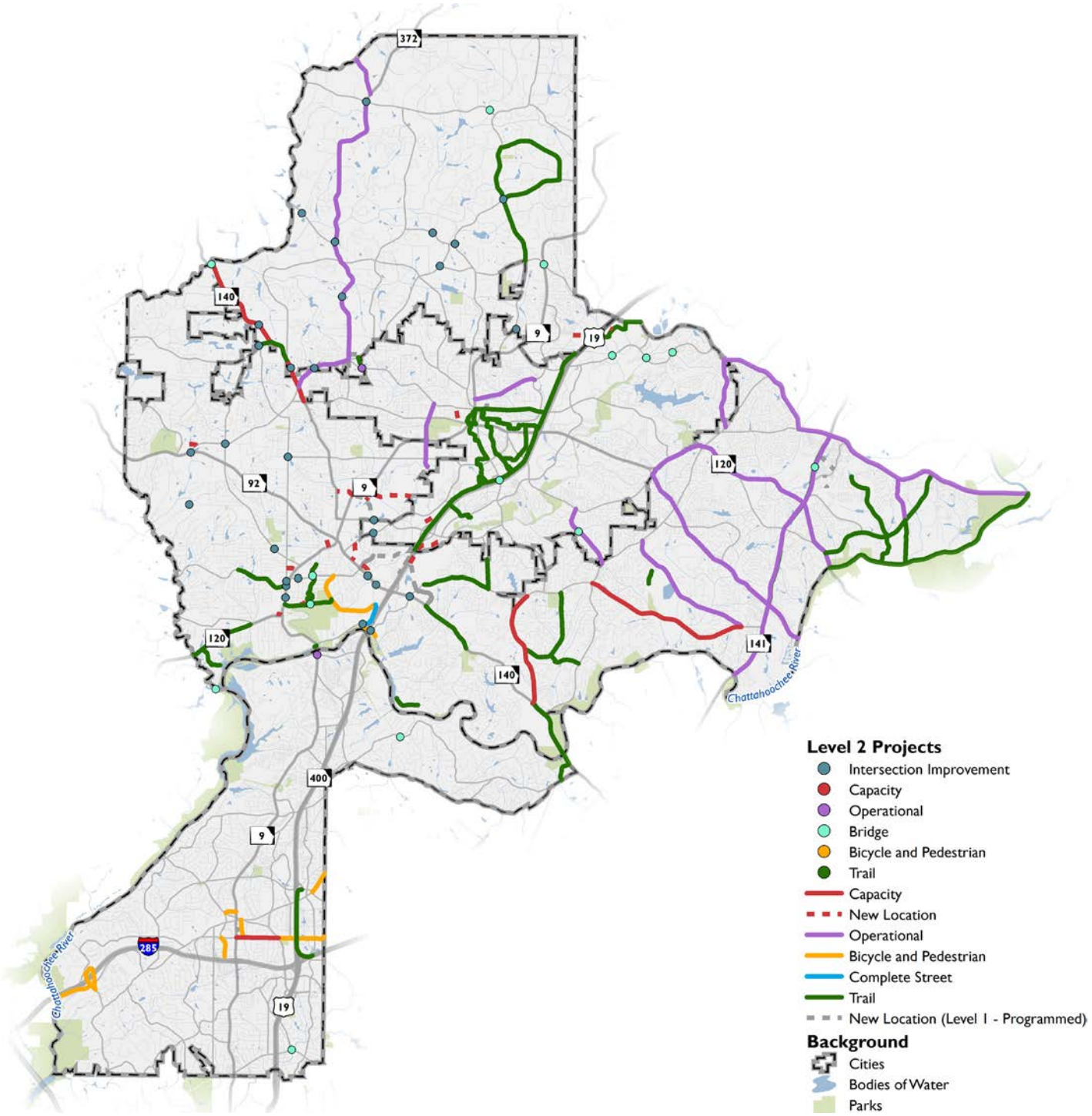
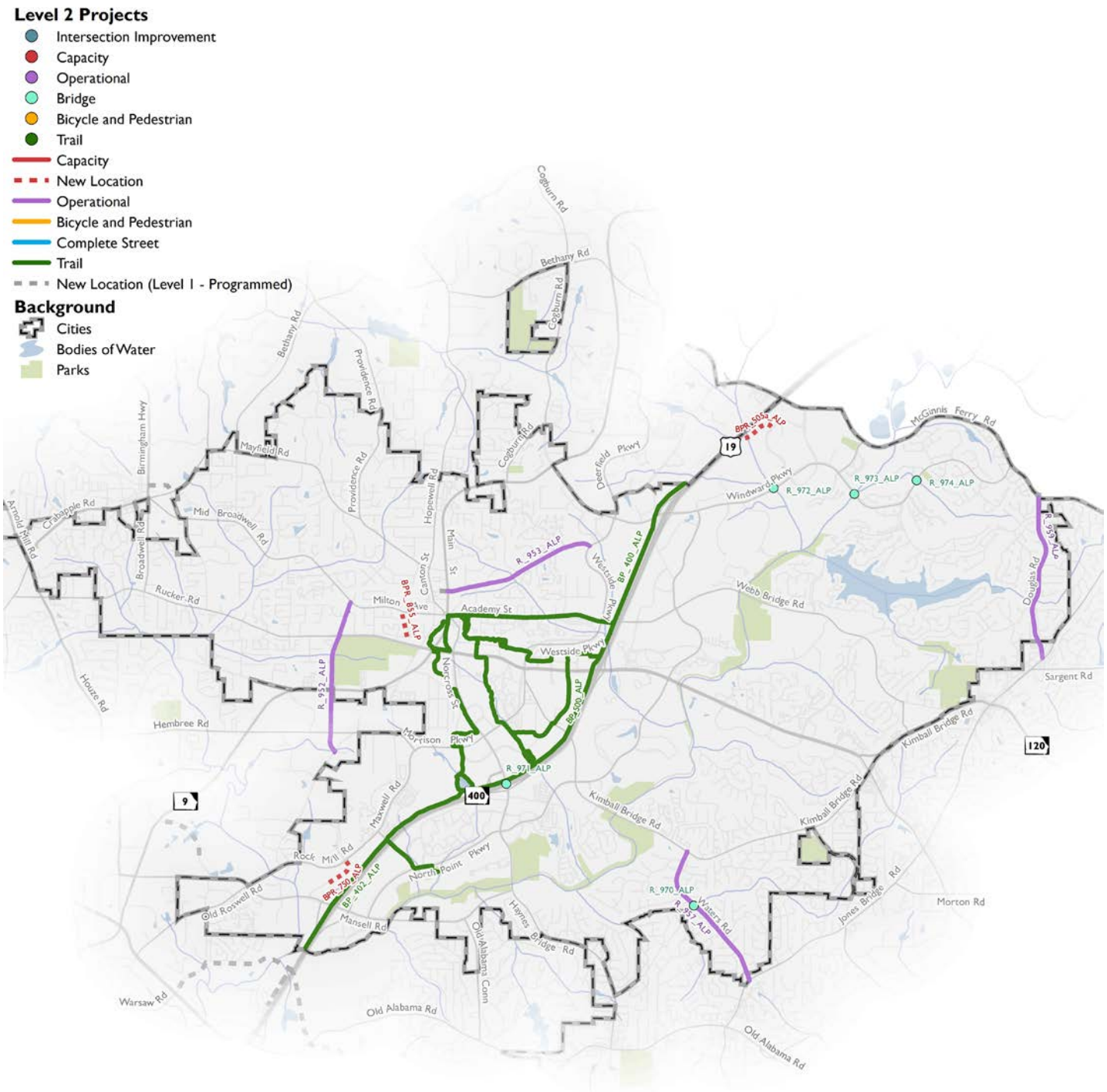
LEVEL 2 PROJECTS

Level 2 projects are the next highest priority once the Level 1 project list is complete. These projects anticipate the availability of future funding sources which may include local, state, and federal level funding. The map below shows the location of all the Level 2 projects with corresponding project identification numbers categorized by project type. More information is provided regarding each project in the tables of Level 2 projects. The funding sources for the projects in Level 2 have not yet been solidified. The North Fulton cities will continue to work with partner agencies to identify and secure funding for these projects and revisit them during future plan updates as needed. Level 1 projects that include new roadways have been added to this map series to illustrate new connections.



Alpharetta Level 2 Projects



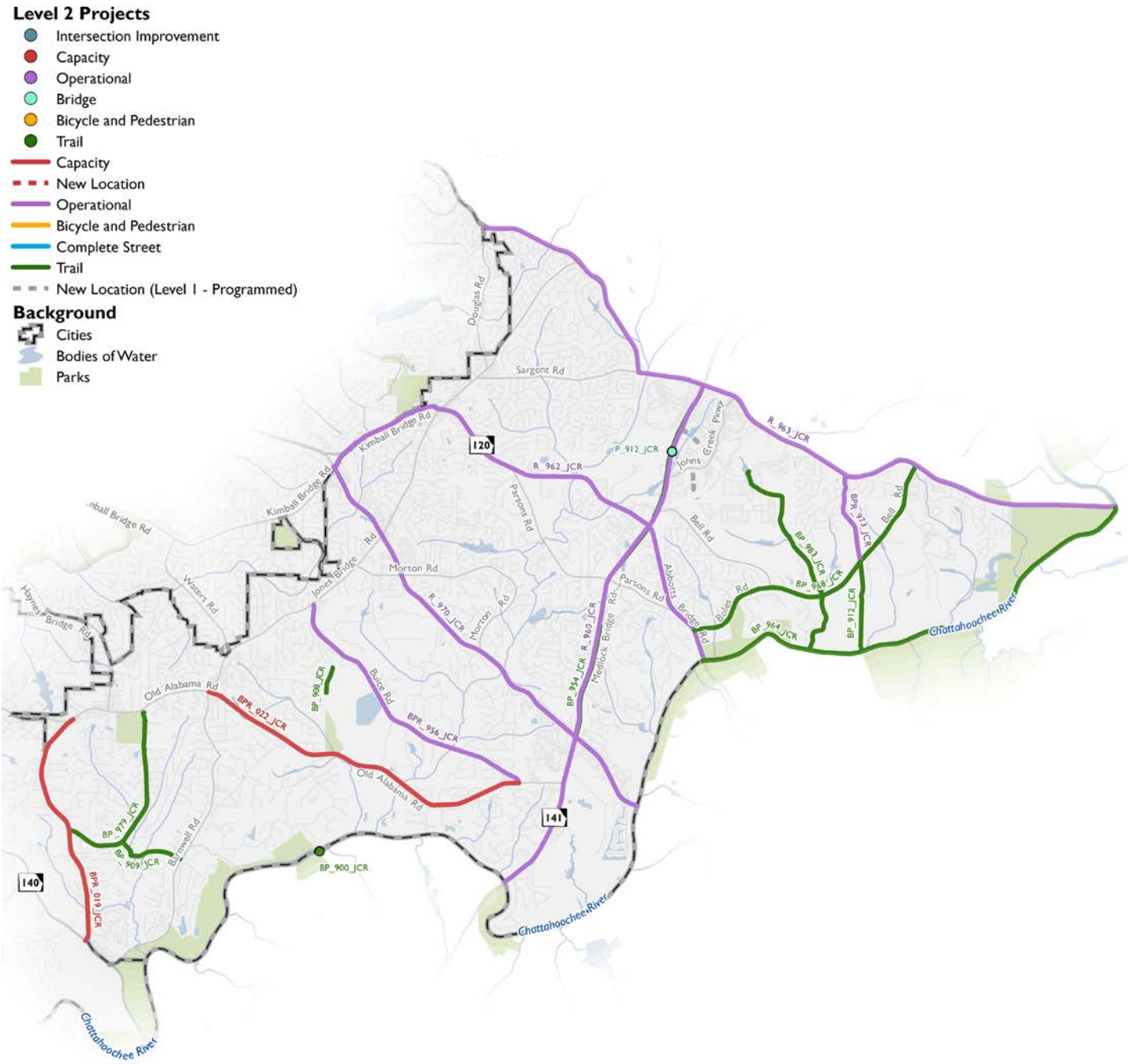
Alpharetta Level 2 Projects

Project ID	Project Name	Cost
NEW LOCATION		
BPR_505a_ALP	Webb Road Overpass	$20,000,000
BPR_750_ALP	Davis Drive Extension	$2,462,000
BPR_855_ALP	New Connection From Marietta Street to Milton Avenue	$7,460,000
OPERATIONAL		
R_952_ALP	Wills Road Operational Improvements	$769,000
R_953_ALP	Cumming Street Operational Improvements	$852,000
R_957_ALP	Waters Road Operational Improvements	$741,000
R_959_ALP	Douglas Road Operational Improvements	$57,000
R_970_ALP	Waters Road at Long Indian Creek Bridge Upgrade	$1,500,000
R_971_ALP	Haynes Bridge Road at GA 400 Bridge Upgrade	$4,868,000
R_972_ALP	Windward Parkway at Camp Creek Bridge Upgrade	$412,000
R_973_ALP	Windward Parkway at Big Creek (West) Bridge Upgrade	$904,000
R_974_ALP	Windward Parkway at Big Creek (East) Bridge Upgrade	$885,000
TRAIL		
BP_400_ALP	PATH 400 from Webb Bridge Road to City Limits	$6,900,000
BP_402_ALP	PATH 400 from City Limits to Encore Parkway	$2,150,000
BP_500_ALP	Alpha Loop	$20,000,000

Alpharetta Level 2 Programs

Project Name	Cost
Sidewalks	$2,500,000
Resurfacing	$5,000,000
Operational	$2,500,000
Streetscaping	$2,500,000
Transit	$250,000

Johns Creek Level 2 Projects



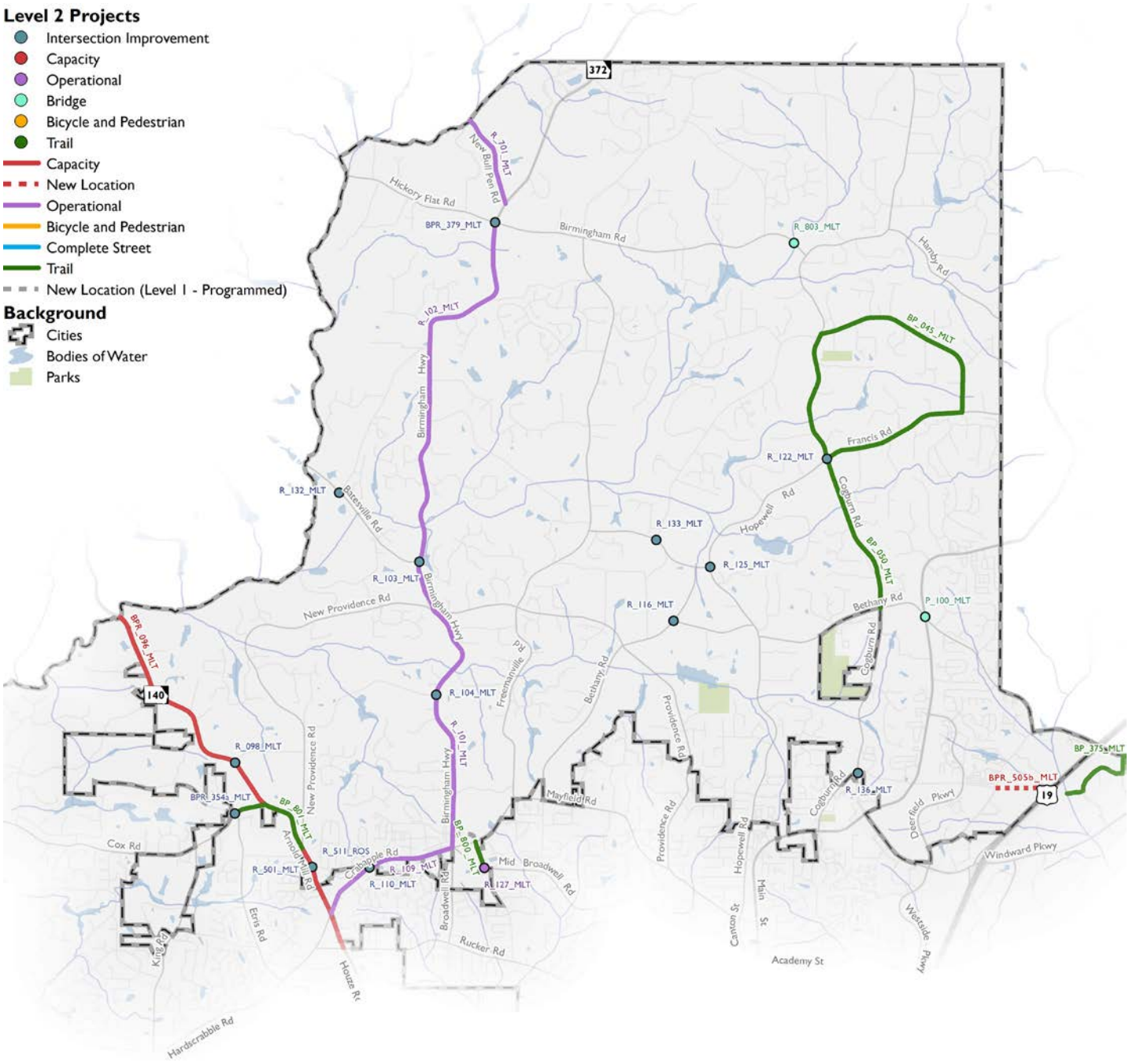
Johns Creek Level 2 Projects

Project ID	Project Name	Cost
CAPACITY		
BPR_019_JCR	Nesbit Ferry Corridor Improvements	$7,000,000
BPR_022_JCR	Old Alabama Road Widening, Segment 3	$7,000,000
OPERATIONAL		
BPR_956_JCR	Buice Road Operational Improvements	$7,500,000
BPR_973_JCR	Rogers Bridge Road Operational Improvements	$1,392,00
P_912_JCR	Medlock Bridge Pedestrian Tunnel	$5,000,000
R_085_JCR	Connected Vehicle Infrastructure	$2,000,000
R_960_JCR	Medlock Bridge Road Beautification and Streetscape	$2,000,000
R_962_JCR	SR 120 (Kimball Bridge Rd/Abbotts Bridge Rd) Beautification and Streetscape	$2,000,000
R_963_JCR	McGinnis Ferry Road Beautification and Streetscape	$2,000,000
R_970_JCR	State Bridge Road Beautification and Streetscape	$2,000,000
TRAIL		
BP_900_JCR	Jones Bridge Road Pedestrian Bridge	$5,000,000
BP_908_JCR	Autry Mill Road Trail	$260,000
BP_909_JCR	Rivermont Parkway Trail	$680,000
BP_912_JCR	Rogers Bridge Road Trail	$500,000
BP_954_JCR	Medlock Bridge Road Trail	$7,540,000
BP_964_JCR	Chattahoochee River Trail	$23,500,000
BP_968_JCR	Boles Road Multi-use Trail	$4,895,000
BP_979_JCR	Brumbelow Road Multi-use Trail	$3,057,000
BP_983_JCR	Cauley Creek Multi-use Trail	$12,960,000

Johns Creek Level 2 Programs

Project Name	Cost
Resurfacing	$10,000,000
Golf Cart Enhancements	$3,000,000
Sidewalks	$5,000,000
Streetscaping	$2,000,000
Traffic Calming	$500,000
Autonomous and Connected Vehicles	$2,500,000

Milton Level 2 Projects



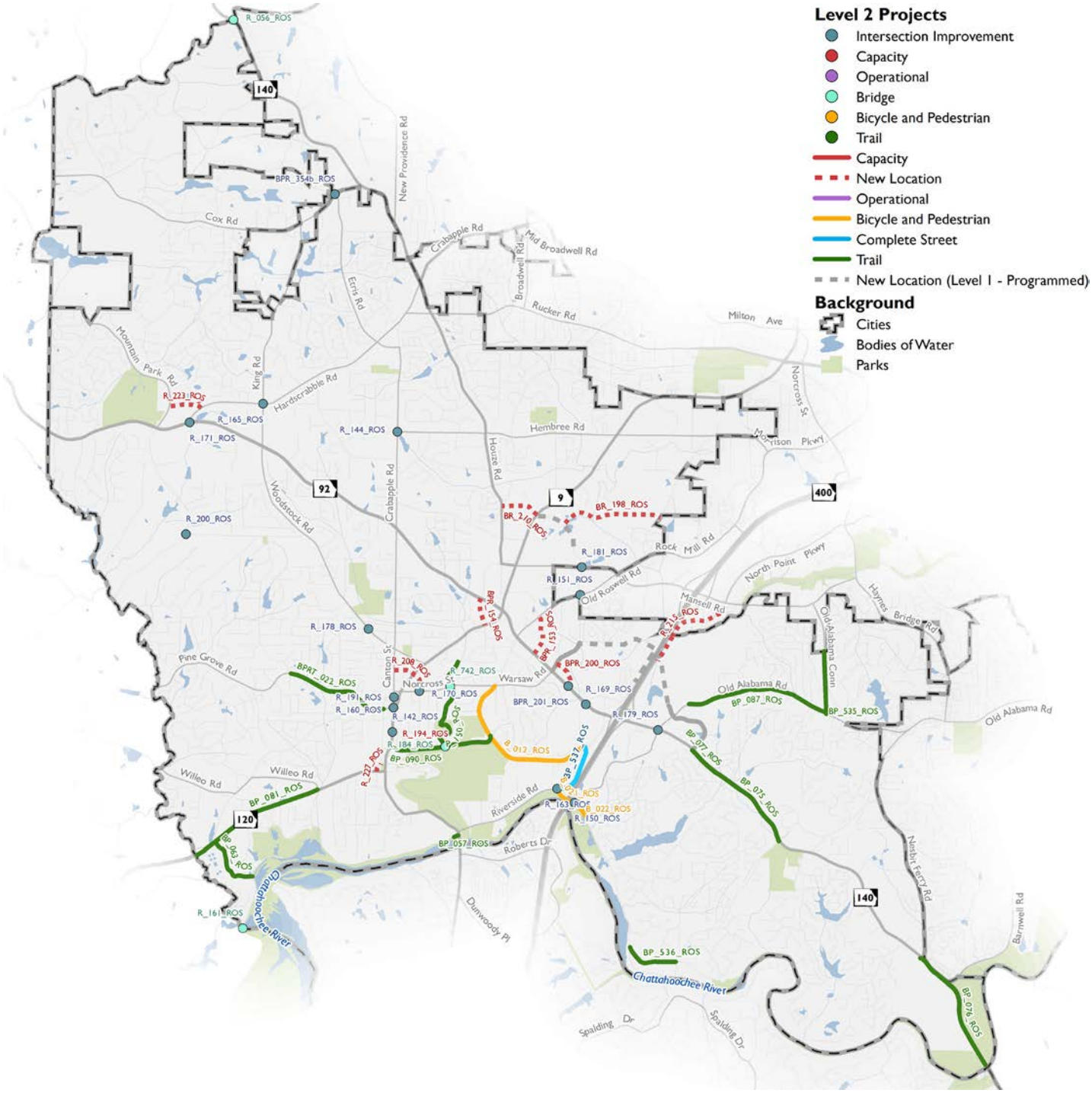
Milton Level 2 Projects

Project ID	Project Name	Cost
CAPACITY		
BPR_096_MLT	Arnold Mill Road Widening	$23,750,000
INTERSECTION		
BPR_354a_MLT	Etris Road at Cox Road Intersection Improvements	$582,000
BPR_379_MLT	Birmingham Highway at Hickory Flat Road Operational, Bicycle, and Pedestrian Intersection Improvements	$2,000,000
R_098_MLT	Arnold Mill Road/Ranchette Road Intersection Improvement	$500,000
R_103_MLT	Birmingham Highway at Batesville Road Intersection Improvements	$1,200,000
R_104_MLT	Birmingham Highway at Dorris Road Intersection Improvements	$625,000
R_110_MLT	Crabapple Road at Green Road Intersection Improvements	$300,000
R_116_MLT	Hagood Road at Bethany Way Intersection Improvements	$450,000
R_122_MLT	Hopewell Road/Francis Road at Cogburn Road Intersection Improvements	$51,000
R_125_MLT	Hopewell Road at Redd Road Intersection Improvements	$951,000
R_132_MLT	Taylor Road at Batesville Road Intersection Improvements	$259,000
R_133_MLT	Thompson Road at Redd Road Intersection Improvements	$450,000
R_136_MLT	Windward Parkway at Webb Road Intersection Improvements	$525,000
R_501_MLT	Arnold Mill Road at Green Road Intersection Improvements	$4,500
R_511_MLT	Crabapple Road at Green Road Intersection Improvements	$4,500
NEW LOCATION		
BPR_505b_MLT	Webb Road Extension	$20,000,000
OPERATIONAL		
R_101_MLT	Birmingham Highway Operational Improvements, Part 1	$3,155,000
R_102_MLT	Birmingham Highway Operational Improvements, Part 2	$3,675,600
R_109_MLT	Crabapple Road Operational Improvements	$1,000,000
R_127_MLT	Mid Broadwell Road at Charlotte Drive Operational Improvements	$102,100
R_701_MLT	New Bullpen Road at Birmingham Highway Operational Improvements	$250,000
R_803_MLT	Birmingham Road Bridge (More East)	$1,250,000
TRAIL		
BP_045_MLT	Bell Memorial Loop Trail	$2,751,000
BP_050_MLT	Cogburn Road Trail	$2,100,000
BP_375_MLT	Big Creek Greenway Connections - Windward Concourse, McGinnis Ferry to Forsyth	$3,315,900
BP_800_MLT	Charlotte Drive Trail	$235,000
BP_801_MLT	Arnold Mill Road/Cox Road Multi-use Path	$750,000
P_100_MLT	Pedestrian Tunnel on Cumming Road crossing Bethany Road	$1,000,000

Milton Level 2 Programs

Project Name	Cost
Sidewalks	$5,000,000
Median, Landscaping, Lighting	$2,000,000
Traffic Calming	$500,000

Roswell Level 2 Projects



Roswell Level 2 Projects

Project ID	Project Name	Cost
BICYCLE AND PEDESTRIAN		
B_012_ROS	Grimes Bridge Road Bicycle Shoulders, Part 1	$900,000
B_018_ROS	Oxbo Road Bicycle Lanes	$1,059,000
B_021_ROS	Riverside Road Bicycle Lanes, Part 1	$273,400
B_022_ROS	Riverside Road Bicycle Lanes, Part 2	$205,000
CAPACITY		
R_208_ROS	Frazier Street Realignment	$167,000
R_227_ROS	Mimosa Boulevard Realignment	$527,000
COMPLETE STREETS		
BP_537_ROS	Dogwood Road Complete Streets	$900,000
INTERSECTION		
BPR_201_ROS	Holcomb Bridge Road at Riverwood Lane Intersection Improvements	$3,000,000
BPR_354b_ROS	Etris Road at Cox Road Intersection Improvements	$582,000
R_142_ROS	Atlanta Street (SR 9/SR 120) at Oak Street Intersection Improvements	$500,000
R_144_ROS	Crabapple Road at Hembree Road Intersection Improvements	$772,000
R_150_ROS	Old Alabama Road at Riverside Road Intersection Improvements	$921,000
R_151_ROS	Old Roswell Road at Warsaw Road Intersection Improvement	$250,000
R_160_ROS	SR 9/SR 120 (Village Center) at Magnolia Street/Canton Street Intersection Improvements	$9,327,000
R_163_ROS	Riverside Road at Dogwood Road Intersection Improvements	$1,000,000
R_165_ROS	Hardscrabble Road at King Road Intersection Improvements	$789,000
R_169_ROS	Holcomb Bridge Road (SR 140) at Dogwood Road Intersection Improvements	$11,200,000
R_170_ROS	Norcross Street at Frazier Street/Forrest Street Intersection Improvements	$1,037,000
R_171_ROS	Woodstock Road (SR 92) at Hardscrabble Road Intersection Improvements	$700,000
R_178_ROS	Woodstock Road at North Coleman Road Intersection Improvements	$753,000
R_179_ROS	Holcomb Bridge Road (SR 140) at Old Alabama Road Intersection Improvements	$9,449,000
R_181_ROS	Mansell Road at Warsaw Road Intersection Improvements	$250,000
R_191_ROS	Canton Street at Webb Street Intersection Improvements	$194,000
R_200_ROS	Jones Road at Bowen Road Intersection Improvements	$1,200,000
NEW LOCATION		
BPR_153_ROS	Commerce Parkway Extension	$5,794,000
BPR_154_ROS	Mansell Road Extension	$5,390,000
BPR_200_ROS	Old Holcomb Bridge Road New Alignment	$550,000
BR_198_ROS	Sun Valley Phase 2	$7,750,000
BR_210_ROS	Sun Valley Phase 3	$1,408,000
R_194_ROS	Myrtle Street Extension	$267,000
R_215_ROS	Big Creek Parkway, Phase 3	$12,151,000
R_223_ROS	Mountain Park/Hardscrabble Connector	$964,000

Roswell Level 2 Projects (Continued)

Project ID	Project Name	Cost
OPERATIONAL		
R_056_ROS	SR 140/Arnold Mill Road Bridge Replacement	$8,953,000
R_161_ROS	Willeo Road Bridge Upgrade	$1,193,000
R_184_ROS	Oxbo Road at Hog Wallow Creek Bridge Upgrade	$557,000
R_742_ROS	Bridge Replacement on Norcross Street at Hog Wallow Creek	$1,000,000
TRAIL		
BP_057_ROS	Azalea Drive Multi-use Path	$17,000
BP_063_ROS	Coleman to the River Connection	$485,000
BP_075_ROS	Holcomb Bridge Road (SR 140) Multi-use Path, Segment 1	$827,000
BP_076_ROS	Holcomb Bridge Road (SR 140) Multi-use Path, Segment 2	$518,000
BP_077_ROS	Holcomb Bridge Road (SR 140) Multi-use Path, Segment 3	$608,000
BP_081_ROS	Marietta Highway (SR 120) Multi-use Path, Part 1	$739,000
BP_087_ROS	Old Alabama Road Multi-use Path	$887,000
BP_090_ROS	Oxbo Road Multi-use Path	$624,000
BP_535_ROS	Old Alabama Connector Multi-use Path	$558,000
BP_536_ROS	Riverside Drive Multi-use Path	$705,000
BPRT_022_ROS	Pine Grove Road Multi-use Trail	$1,500,000
P_150_ROS	Hog Wallow Creek Trail, Part 2	$2,330,000

Roswell Level 2 Programs

Project Name	Cost
Sidewalks	$5,000,000
Bicycle Enhancements	$3,000,000
Mobility Enhancements	$5,000,000
Traffic Operations	$1,000,000
Transit	$1,000,000
Golf Cart Enhancements	$1,000,000
Conceptual Studies	$1,000,000

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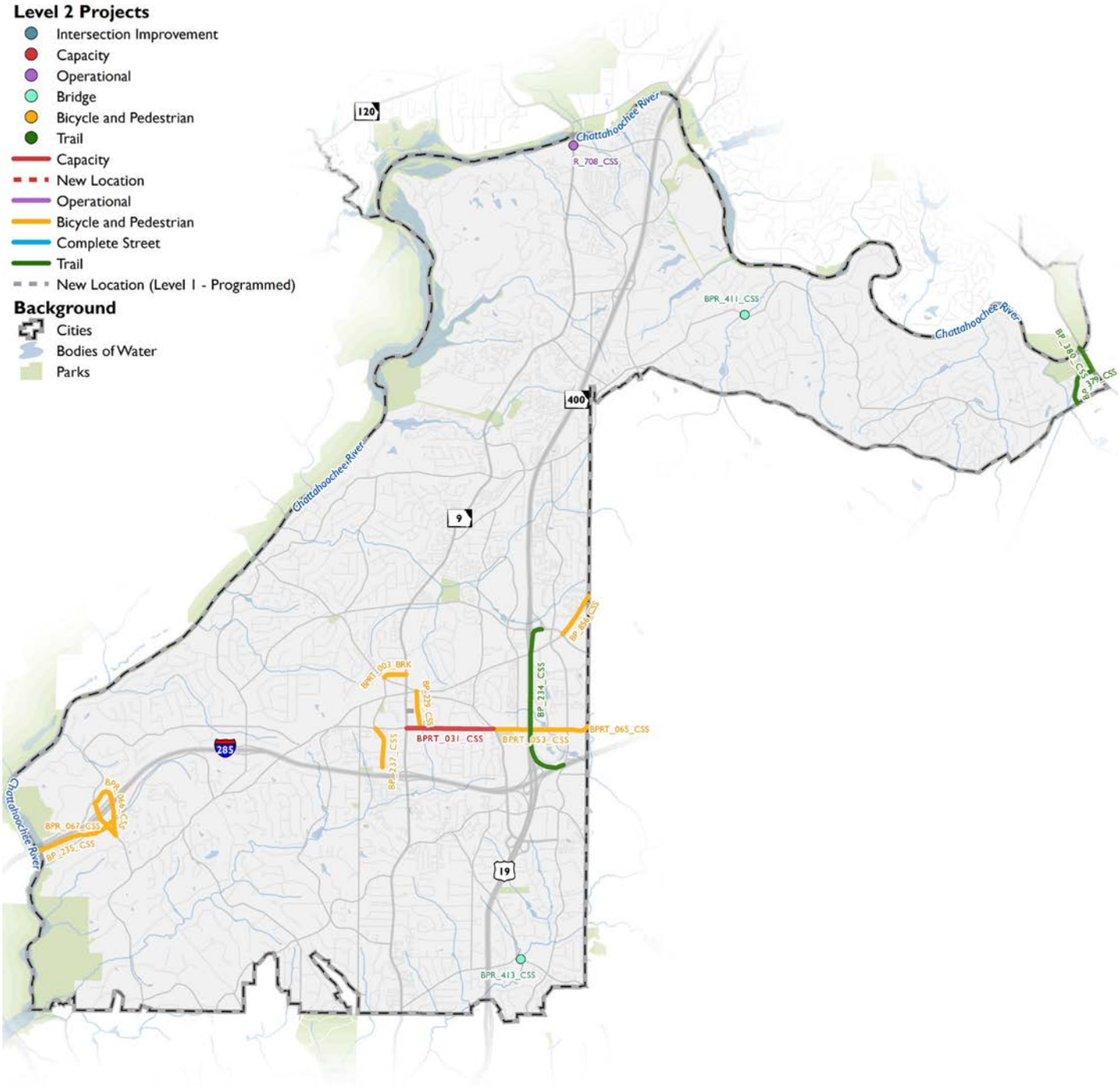
Sandy Springs Level 2 Projects



Sandy Springs Level 2 Projects

Project ID	Project Name	Cost
BICYCLE AND PEDESTRIAN		
BP_229_CSS	Boylston Drive Sidepath and Intersection Realignment	$2,500,000
BP_235_CSS	Powers Ferry Road Sidepath	$5,937,000
BP_237_CSS	Sandy Springs Circle Sidepath and Intersection Improvement at Cliftwood Drive	$2,500,000
BP_379_CSS	River Exchange Drive Sidepath	$2,000,000
BP_380_CSS	Holcomb Bridge Road Sidepath	$1,000,000
BP_856_CSS	Mt. Vernon Highway Multi-use Path	$100,000
BPR_066_CSS	New Northside Drive Improvements	$3,944,000
BPR_067_CSS	Northside Drive Improvements	$2,523,000
BPRT_003_BRK	Sandy Springs Circle Improvements, Phase 3	$622,000
BPRT_053_CSS	Hammond Drive Improvements, Phase 1	$3,341,000
BPRT_065_CSS	Hammond Drive Improvements, Phase 2	$3,341,000
CAPACITY		
BPRT_031_CSS	Hammond Drive Phase 1 Efficiency Improvements	$60,000,000
OPERATIONAL		
BPR_411_CSS	Spalding Drive near Ball Mill Creek Bridge Replacement	$800,000
BPR_413_CSS	Windsor Parkway at Nancy Creek Bridge Upgrade	$1,500,000
R_708_CSS	Roswell Road NE at Roberts Drive Operational Improvements	$5,500,000
TRAIL		
BP_234_CSS	GA 400 Multi-use Trail (PATH 400)	$7,500,000

Sandy Springs Level 2 Programs

Project Name	Cost
Sidewalks	$10,000,000
Stormwater	$5,000,000
Conceptual Studies	$1,000,000
Transit	$2,500,000
Autonomous and Connected Vehicles	$2,500,000

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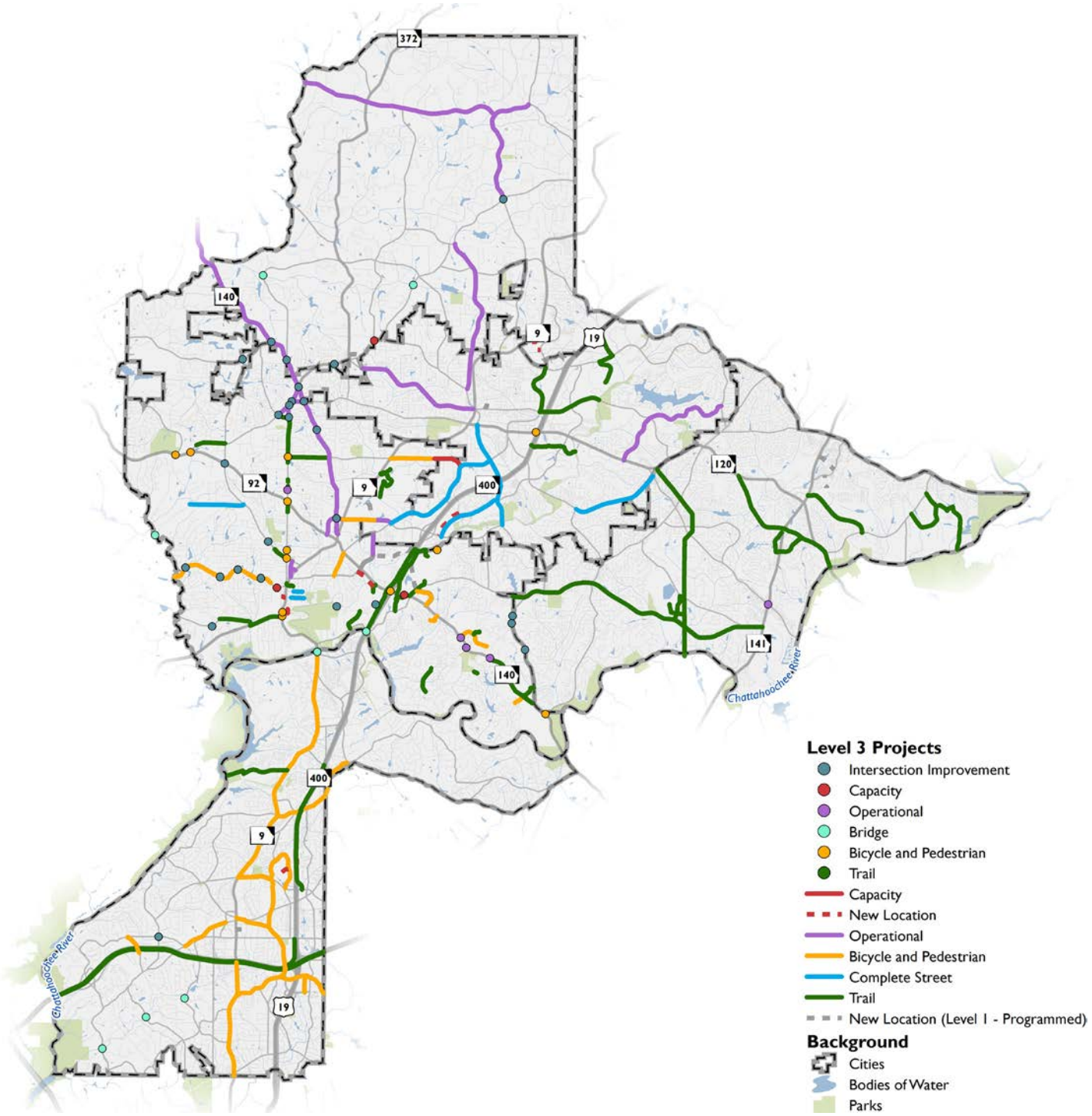
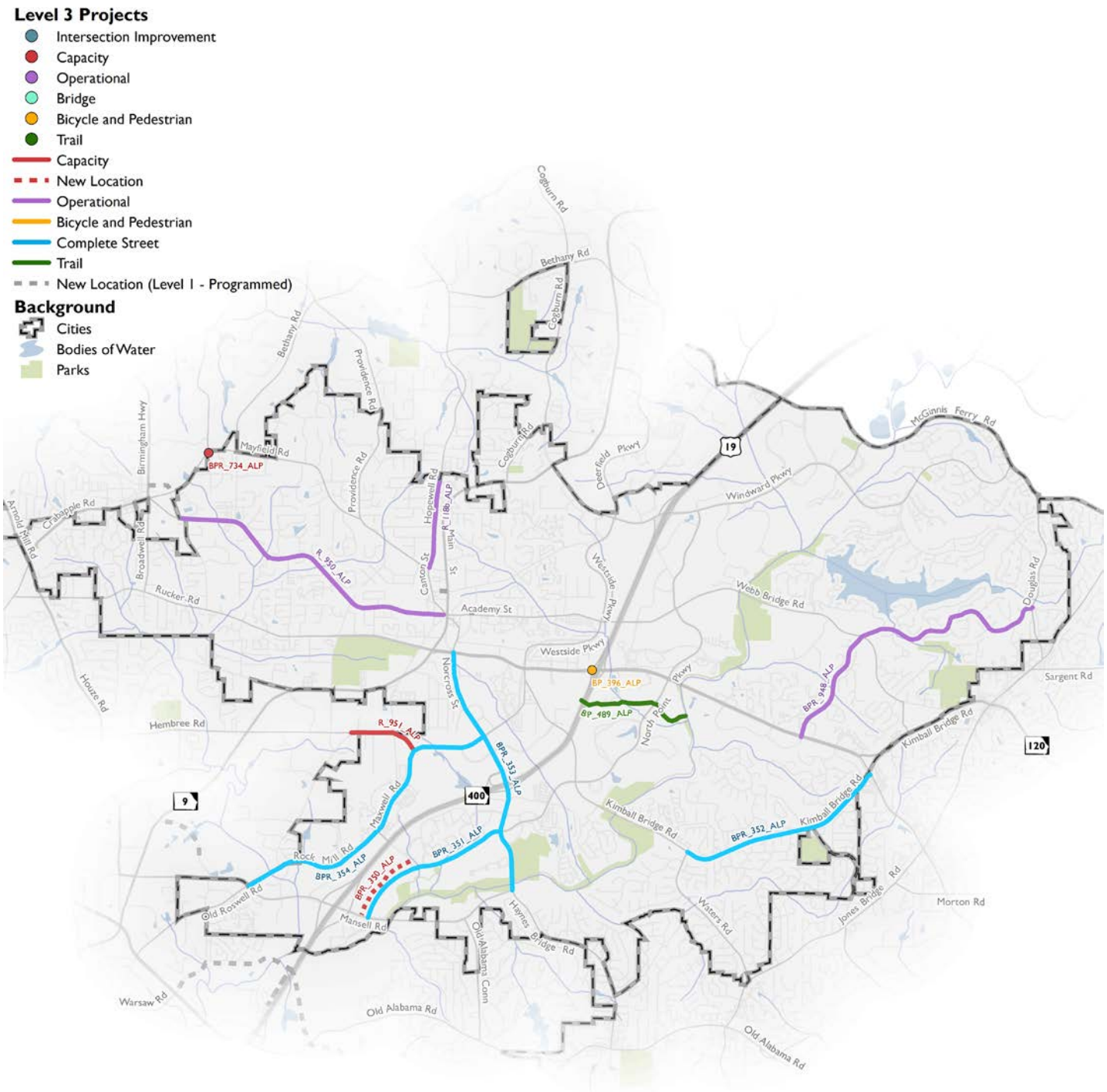
LEVEL 3 PROJECTS

Level 3 projects were identified as the third priority list to take the plan toward its horizon year (2040). Similar to Level 2 projects, possible funding sources for Level 3 projects include future iterations of a North Fulton TSPLOST, state funds, and federal funds. The map below shows the location of all the Level 3 projects with corresponding project identification numbers categorized by project type. More information is provided regarding each project in the tables of Level 3 projects. Level 1 projects that include new roadways have been added to this map series to illustrate new connections. It is important to note here that Level 2 new locationprojects have not been added to this map because the funding for these projects is still uncertain.



Alpharetta Level 3 Projects



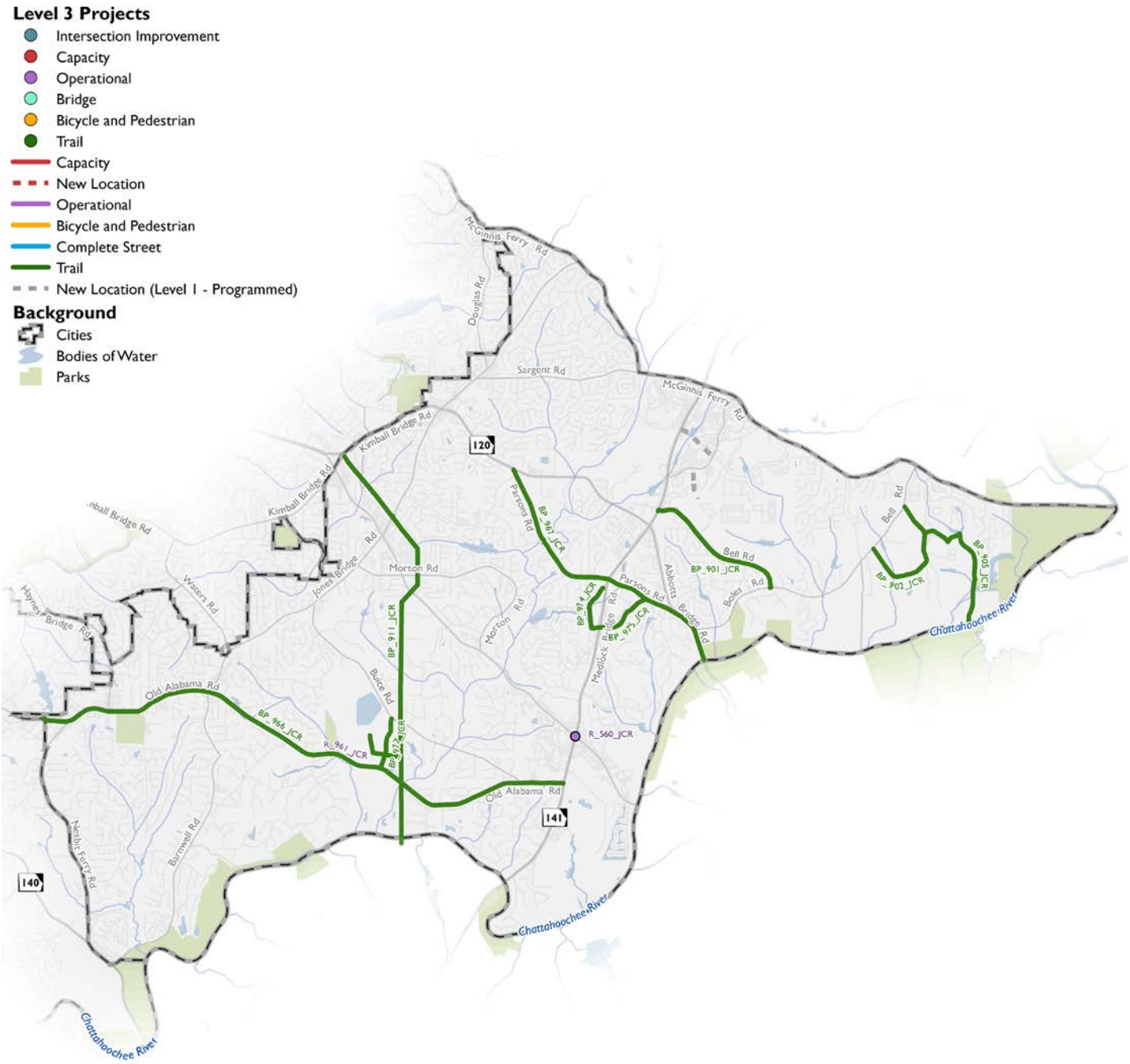
Alpharetta Level 3 Projects

Project ID	Project Name	Cost
BICYCLE AND PEDESTRIAN		
BP_396_ALP	Old Milton Parkway at Georgia Highway 400 Bicycle and Pedestrian Intersection Improvements	$53,000
CAPACITY		
BPR_734_ALP	Mayfield Road at Freemanville Road Realignment	$1,621,000
R_951_ALP	Hembree Road Widening	$4,790,000
COMPLETE STREETS		
BPR_351_ALP	North Point Parkway Complete Streets	$5,000,000
BPR_352_ALP	Kimball Bridge Road Complete Streets	$5,000,000
BPR_353_ALP	Haynes Bridge Road Complete Streets	$5,000,000
BPR_354_ALP	Westside Parkway Complete Streets	$7,460,000
NEW LOCATION		
BPR_350_ALP	North Point Center West Road Extension	$5,000,000
OPERATIONAL		
BPR_948_ALP	Southlake Drive and Park Bridge Operational Improvements	$8,069,000
R_118b_ALP	Hopewell Road Operational Improvements, Part 1	$687,000
R_950_ALP	Mid Broadwell Road Operational Improvements	$1,707,000
TRAIL		
BP_489_ALP	Path 400 Trail-Big Creek Greenway Connector Trail	$3,262,000

Alpharetta Level 3 Programs

Project Name	Cost
Sidewalks	$2,500,000
Resurfacing	$5,000,000
Operational	$2,500,000
Streetscaping	$2,500,000
Transit	$250,000

Johns Creek Level 3 Projects



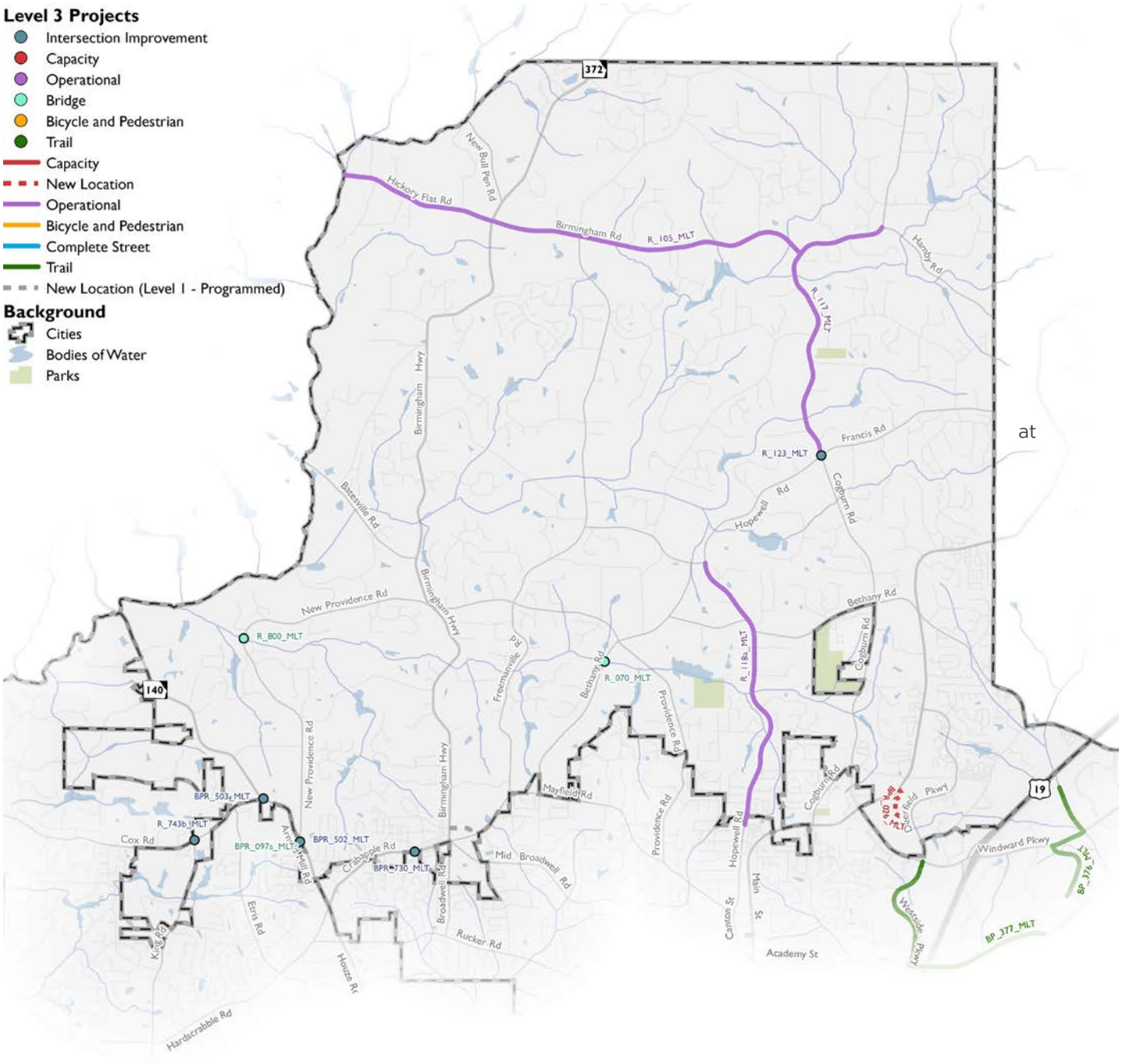
Johns Creek Level 3 Projects

Project ID	Project Name	Cost
OPERATIONAL		
R_560_JCR	Medlock Bridge and State Bridge Grade Separation	$50,000,000
R_961_JCR	Old Alabama Road Beautification and Streetscape	$2,000,000
TRAIL		
BP_901_JCR	Bell Road Multi-use Path	$4,611,000
BP_902_JCR	Rogers Circle Multi-use Path	$4,137,000
BP_905_JCR	Rogers Circle Extension Multi-use Path	$4,925,000
BP_911_JCR	Kimball Bridge Road Multi-use Path	$14,400,000
BP_966_JCR	Old Alabama Road Multi-use Trail	$17,677,000
BP_967_JCR	Parsons Road Multi-use Trail	$4,625,000
BP_974_JCR	Old Medlock Bridge Road Multi-use Trail	$696,700
BP_975_JCR	Wilson Road Multi-use Trail	$998,000
BP_977_JCR	Spruill Road Multi-use Trail	$776,000

Johns Creek Level 3 Programs

Project Name	Cost
Resurfacing	$10,000,000
Golf Cart Enhancements	$3,000,000
Sidewalks	$5,000,000
Streetscaping	$2,000,000
Traffic Calming	$500,000
Autonomous and Connected Vehicles	$2,500,000

Milton Level 3 Projects



Milton Level 3 Projects

Project ID	Project Name	Cost
INTERSECTION		
BPR_097a_MLT	Arnold Mill Road/Cagle Road Intersection Realignment	$2,876,000
BPR_502_MLT	Arnold Mill Road at New Providence Road Intersection Improvements	$4,500
BPR_503_MLT	Arnold Mill Road and Cox Road Intersection Improvements	$4,500
BPR_730_MLT	Crabapple Road at Crabapple Chase Intersection Improvements	$100,000
R_123_MLT	Hopewell Road/Francis Road at Cogburn Road Intersection Improvements	$383,000
R_743b_MLT	Roundabout at Cox Road and King Road	$2,000,000
NEW LOCATION		
BPR_026_MLT	Cumming Highway-Deerfield Connector New Location	$20,000,000
OPERATIONAL		
R_070_MLT	Cooper Sandy Creek Bridge Replacement over Bethany Bend	$1,250,000
R_105_MLT	Birmingham Road/Hickory Flat Road Operational Improvements	$3,512,000
R_117_MLT	Hopewell Road Operational Improvements, Part 2	$2,165,000
R_118a_MLT	Hopewell Road Operational Improvements, Part 1	$2,274,000
R_800_MLT	New Providence Road over Cooper Sandy Creek Bridge	$4,000,000
TRAIL		
BP_376_MLT	Cogburn, Webb, Bethany, SR 9, Deerfield Loop Trails (Portion)	$6,474,000
BP_377_MLT	Deerfield, Westside, Webb Bridge Trails	$7,390,000

Milton Level 3 Programs

Project Name	Cost
Sidewalks	$5,000,000
Median, Landscaping, Lighting	$2,000,000
Traffic Calming	$500,000

Roswell Level 3 Projects

Roswell Level 3 Projects

Project ID	Project Name	Cost
BICYCLE AND PEDESTRIAN		
B_009_ROS	Fowler Street Connection	$7,000
B_011_ROS	Grimes Bridge Road Bicycle Shoulders, Part 2	$503,000
B_013_ROS	Hembree Road Bicycle Lanes	$586,000
B_014_ROS	Holcomb Woods Parkway Bicycle Lanes	$409,000
B_016_ROS	Martin Road/Martins Landing Drive Bicycle Shoulders	$177,000
B_019_ROS	Pine Grove Road Bicycle Shoulders	$605,000
B_023_ROS	Scott Road Bicycle Lanes	$668,000
B_024_ROS	Steeplechase Drive Bicycle Lanes	$681,000
BP_451_ROS	GA 400 at Holcomb Bridge Road Bicycle and Pedestrian Intersection Improvements	$53,000
BP_453_ROS	Holcomb Bridge Road at Barnwell Road Bicycle and Pedestrian Intersection Improvements	$35,000
BP_458_ROS	Marietta Highway at South Atlanta Street Bicycle and Pedestrian Intersection Improvements	$35,000
BP_459_ROS	North Atlanta Street at Park Square Bicycle and Pedestrian Intersection Improvements	$35,000
BP_463_ROS	Canton Street at Woodstock Road Bicycle and Pedestrian Intersection Improvements	$35,000
BP_464_ROS	Canton Street at Minhinette Drive Bicycle and Pedestrian Intersection Improvements	$35,000
BP_465_ROS	Crabapple Road at East Crossville Road Bicycle and Pedestrian Intersection Improvements	$70,000
BP_467_ROS	Crabapple Road at Hembree Road Bicycle and Pedestrian Intersection Improvements	$70,000
BP_470_ROS	Future Big Creek Greenway Trailhead at Trail Entrance Bicycle and Pedestrian Intersection Improvements	$35,000
BP_480_ROS	Hardscrabble Road at Woodstock Road Bicycle and Pedestrian Intersection Improvements	$70,000
BP_481_ROS	Bowen Road at Old Mountain Park Road Bicycle and Pedestrian Intersection Improvements	$35,000
BP_534_ROS	Mansell Road Sidepaths	$442,000
CAPACITY		
PR_003_ROS	Elm Street Widening	$162,000
R_145_ROS	Holcomb Bridge Road (SR 140) Realignment	$12,215,000
R_224_ROS	Houze Road (SR 140) Realignment	$1,383,000
R_710_ROS	Magnolia Street at Thomas Street Realignment	$848,000
COMPLETE STREETS		
BP_079_ROS	Jones Road Complete Streets Improvements	$1,457,000
BPRT_019_ROS	Hill Street Streetscape	$897,000
BPRT_020_ROS	Oak Street Streetscape, Phase 2	$1,565,000
BPRT_021_ROS	Oak Street Streetscape, Phase 3	$1,088,000

Roswell Level 3 Projects Continued

Project ID	Project Name	Cost
INTERSECTION		
BPR_097b_ROS	Arnold Mill Road at Cagle Road Intersection Realignment	$2,876,000
BPR_500_ROS	Rucker Road at Houze Road Intersection Improvements	$5,000
BPR_506_ROS	Crabapple Road at Rucker Road Intersection Improvements	$40,000
BPR_509_ROS	Etris Road at Crabapple Road Intersection Improvements	$40,000
R_154_ROS	Pine Grove Road at North Coleman Road Intersection Improvements	$753,000
R_155_ROS	Pine Grove Road at Lake Charles Road Intersection Improvements	$772,000
R_156_ROS	Pine Grove Road at Hightower Road/Waterford Way Intersection Improvements	$1,750,000
R_157_ROS	Woodstock Road at Roswell Area Park Entrance Intersection Improvements	$733,000
R_158_ROS	Nesbit Ferry Road at Scott Road Intersection Improvements	$1,000,000
R_159_ROS	Nesbit Ferry Road at Nesbit Lakes Drive Intersection Improvements	$733,000
R_162_ROS	Pine Grove Road at Shallowford Road Intersection Improvements	$800,000
R_164_ROS	Houze Road (SR 140) at Saddle Creek Drive Intersection Improvements	$753,000
R_172_ROS	Crossville Road (SR 92) at Woodstock Road Intersection Improvements	$250,000
R_174_ROS	Houze Road (SR 140) at Mansell Road Intersection Improvements	$400,000
R_176_ROS	Grimes Bridge Road at Shadowbrook Drive Intersection Improvements	$800,000
R_177_ROS	Nesbit Ferry Road at Brumbelow Road Intersection Improvements	$180,000
R_182_ROS	Grimes Bridge Road at Dogwood Road Intersection Improvements	$733,000
R_185_ROS	Coleman Road at Willeo Road (West) Intersection Improvement	$772,000
R_507_ROS	Hardscrabble Road at Crabapple Road Intersection Improvements	$8,000
R_508_ROS	Hardscrabble Road at Etris Road Intersection Improvements	$5,000
R_510_ROS	Crabapple Road at Houze Road Intersection Improvements	$5,000
R_743a_ROS	Roundabout at Cox Road and King Road	$2,000,000
NEW LOCATION		
R_228_ROS	Oak Street Extension - West Extension	$4,000,000
R_235_ROS	Southern Parallel Connector	$9,000,000
OPERATIONAL		
BP_084_ROS	Multi-use Bridge over Chattahoochee River under GA 400	$913,000
BPR_479_ROS	Holcomb Bridge Road at Eves Road Operational Improvements	$2,000,000
BPR_733_ROS	Crabapple Road at Houze Way Operational Improvements	$164,000
PR_004_ROS	Cherry Way Widening	$377,000
PR_005_ROS	Green Street Widening	$764,000
R_070_GDOT	SR 140 Operational and Safety Improvements in Cherokee County and Northern Fulton County	$5,268,000
R_175_ROS	Jones Road at Willeo Creek Bridge Upgrade	$577,000
R_220_ROS	The “Silos” Area	$378,000
R_222_ROS	Mansell Road ATMS	$238,000
R_236_ROS	Warsaw Road Safety Improvements	$789,000
R_741_ROS	Holcomb Bridge Road at Scott Road Traffic Signal	$248,000

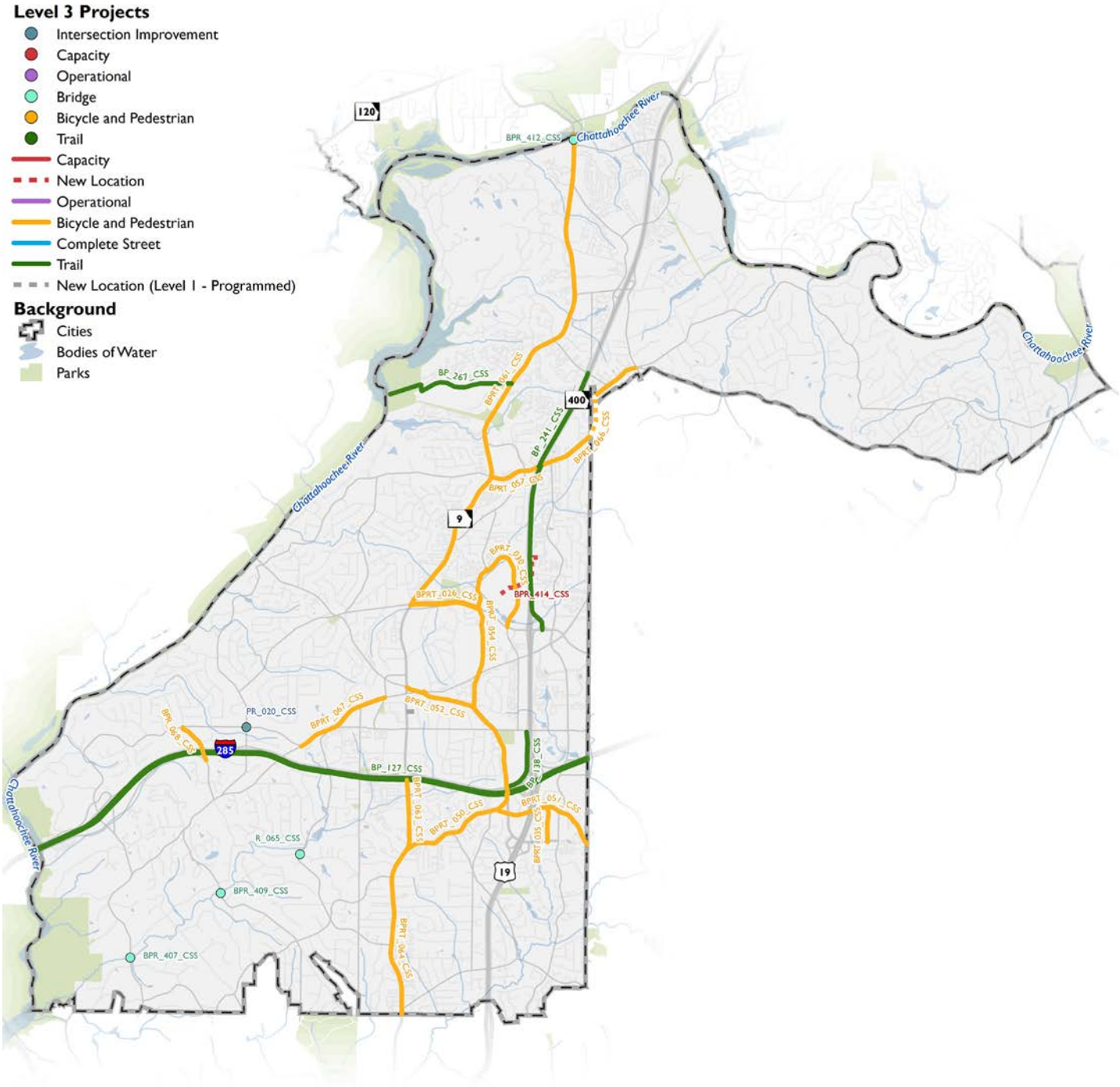
Roswell Level 3 Projects Continued

TRAIL		
BP_058_ROS	Big Creek Greenway to River Tunnel Connection	$5,716,000
BP_059_ROS	Big Creek to Old Alabama Road Multi-use Path	$1,607,000
BP_061_ROS	Centennial High School Trail	$66,000
BP_062_ROS	City Hall To Canton Street Underpass	$1,844,000
BP_064_ROS	Crabapple Road Multi-use Path	$295,000
BP_066_ROS	Dogwood Road (Purple) Multi-use Path	$114,000
BP_067_ROS	Eves Circle Multi-use Path	$166,000
BP_069_ROS	Foe Killer Creek Multi-use Trail (South)	$1,490,000
BP_070_ROS	Hardscrabble Road Multi-use Path	$368,000
BP_072_ROS	Hembree Road Multi-use Path	$783,000
BP_078_ROS	Holcomb Bridge Road (SR 140) Multi-use Path, Segment 4	$1,500,000
BP_082_ROS	Marietta Highway (SR 120) Multi-use Path, Part 2	$184,000
BP_088_ROS	Old Dogwood Road Multi-use Path	$830,000
BP_089_ROS	Old Holcomb Bridge Road Multi-use Path	$448,000
BP_092_ROS	Riverside Road/Grimes Bridge Road Multi-use Trail	$599,000
BP_095_ROS	Steeplechase to East Roswell Park Connection	$178,000
BP_096_ROS	Steeplechase To Nesbit Ferry Connection	$185,000
BP_098_ROS	Willeo Road (East) (Red) Multi-use Path	$367,000
BP_099_ROS	Woodstock Street (Green) Multi-use Path	$228,000
BP_100_ROS	Etris Road/Crabapple Road Multi-use Trail	$900,000

Roswell Level 3 Programs

Project Name	Cost
Bicycle Enhancements	$3,000,000
Mobility Enhancements	$5,000,000
Traffic Operations	$1,000,000
Transit	$1,000,000
Golf Cart Enhancements	$1,000,000
Conceptual Studies	$1,000,000

Sandy Springs Level 3 Projects



Sandy Springs Level 3 Projects

Project ID	Project Name	Cost
BICYCLE AND PEDESTRIAN		
BPR_068_CSS	Raiders Drive/Powers Ferry Improvements	$7,115,000
BPRT_026_CSS	Abernathy Road Improvements	$2,099,000
BPRT_030_CSS	Glenlake Parkway Bicycle and Pedestrian Improvements	$71,000
BPRT_035_CSS	Meridian Mark Bicycle and Pedestrian Improvements	$944,000
BPRT_050_CSS	Glenridge Drive Improvements, Part 1	$5,283,000
BPRT_051_CSS	Johnson Ferry Road Improvements, Part 1	$3,890,000
BPRT_052_CSS	Johnson Ferry Road Improvements, Part 2	$3,272,000
BPRT_054_CSS	Glenridge Drive Improvements, Part 2	$7,072,000
BPRT_057_CSS	Dalrymple Road/Spalding Drive Improvements	$6,890,000
BPRT_066_CSS	Spalding Drive Improvements	$5,680,000
BPRT_067_CSS	Mount Vernon Highway Improvements, Part 1	$14,904,000
INTERSECTION		
PR_020_CSS	Riverside Drive at Heards Ferry Road Intersection Improvements	$2,400,000
NEW LOCATION		
BPR_414_CSS	Ashton Woods “Glenn Tract” Proposed Glenlake Parkway Connection	$20,000,000
OPERATIONAL		
BPR_407_CSS	Northside Drive at Long Island Creek Bridge Replacement	$2,523,000
BPR_409_CSS	Powers Ferry Road at Long Island Creek Bridge Replacement	$7,115,000
BPR_412_CSS	SR 9 at Chattahoochee River Bridge Replacement	$15,00,000
BPRT_061_CSS	Roswell Road Boulevard Part A (Next 10)	$4,973,000
BPRT_063_CSS	Roswell Road Boulevard Part C (Next 10)	$1,471,000
BPRT_064_CSS	Roswell Road Boulevard Part D (Next 10)	$3,121,000
R_065_CSS	Long Island Drive at Long Island Creek Bridge Repair	$2,000,000
TRAIL		
BP_127_CSS	I-285 Multi-use Trail	$9,411,000
BP_138_CSS	Lakeside-Hammond Commuter Trail (Independent Alignment)	$644,000
BP_241_CSS	GA 400 Multi-use Trail 1 (PATH 400)	$13,000,000
BP_267_CSS	Morgan Falls Multi-use Trail	$1,000,000

Sandy Springs Level 3 Programs

Project Name	Cost
Sidewalks	$10,000,000
Stormwater	$5,000,000
Conceptual Studies	$1,000,000
Transit	$2,500,000
Autonomous and Connected Vehicles	$2,500,000

SUMMARY

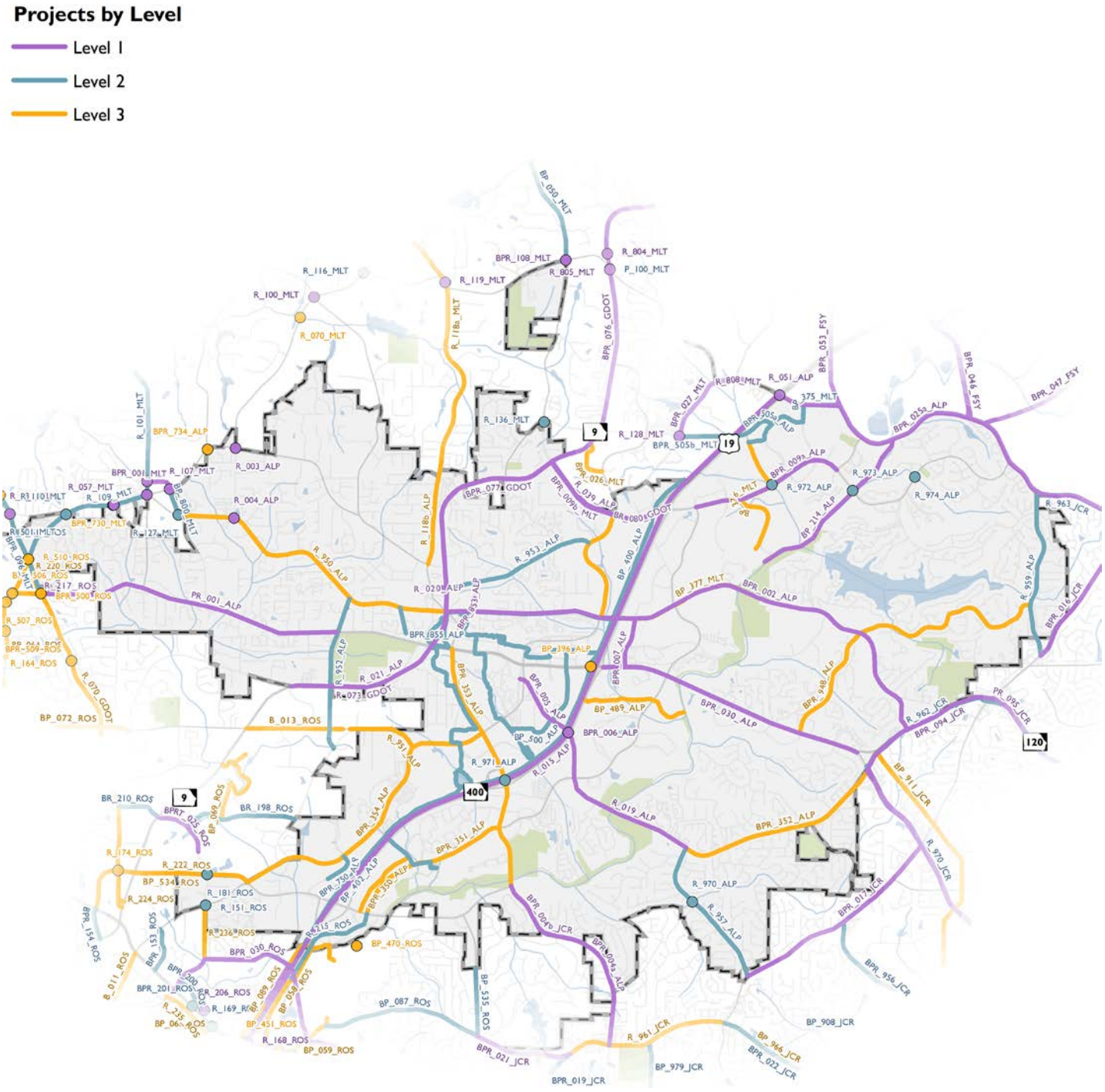
The priority projects for the NFCTP have been summarized in the table below by project type and by funding level (Level 1, Level 2, Level 3). The table below offers details about the total cost and city share of total cost for projects. Local match for the projects was considered on a case-by-case basis. Note that Level 1 projects include those that are fully funded and sponsored at a regional and statewide level (e.g., SR 400 managed lanes, Revive 285, etc.).

Project Summary						
	Level 1		Level 2		Level 3	
Project Type	City Cost	Total Cost	City Cost	Total Cost	City Cost	Total Cost
Bicycle and Pedestrian	$25,852,000	$39,083,000	$25,497,000	$30,247,000	$58,593,000	$74,230,000
Capacity	$125,338,000	$337,250,000	$48,794,000	$84,044,000	$8,852,000	$21,019,000
Complete Streets	$5,173,000	$22,262,000	$900,000	$900,000	$26,010,000	$26,010,000
Intersection	$65,408,000	$67,175,000	$16,318,000	$48,376,000	$14,736,000	$23,174,000
New Location	$75,172,000	$82,172,000	$48,197,000	$84,197,000	$22,000,000	$43,462,000
Operational	$126,013,000	$242,294,000	$23,074,000	$64,066,000	$39,672,000	$114,016,000
Trail	$18,245,000	$18,604,000	$89,655,000	$144,891,000	$89,238,000	$112,449,000
Programs (all)	-	-	$81,250,000	-	$81,250,000	-

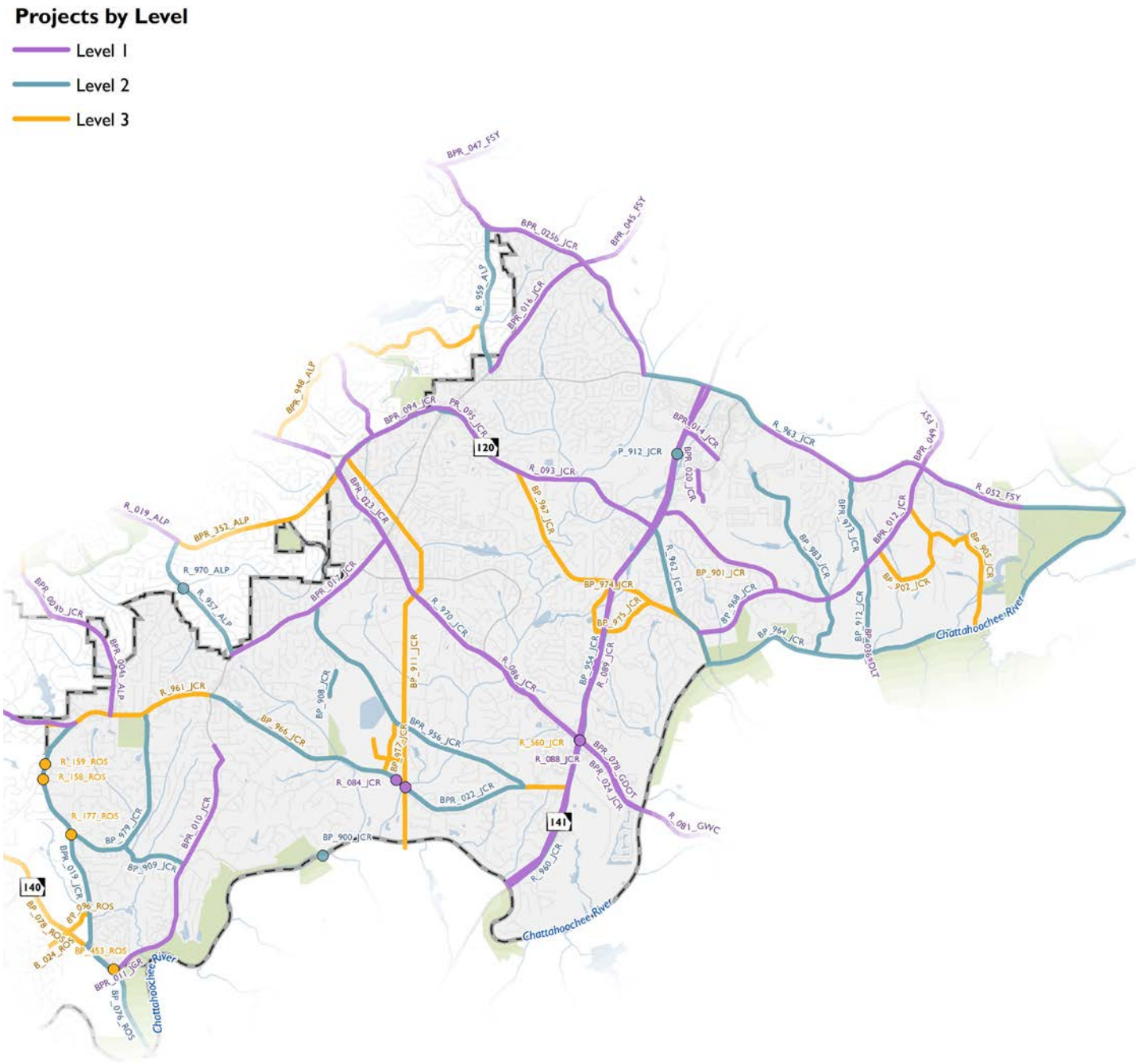
City Projects by Level

The following pages include maps for the five major North Fulton Cities with projects broken out by associated funding levels.

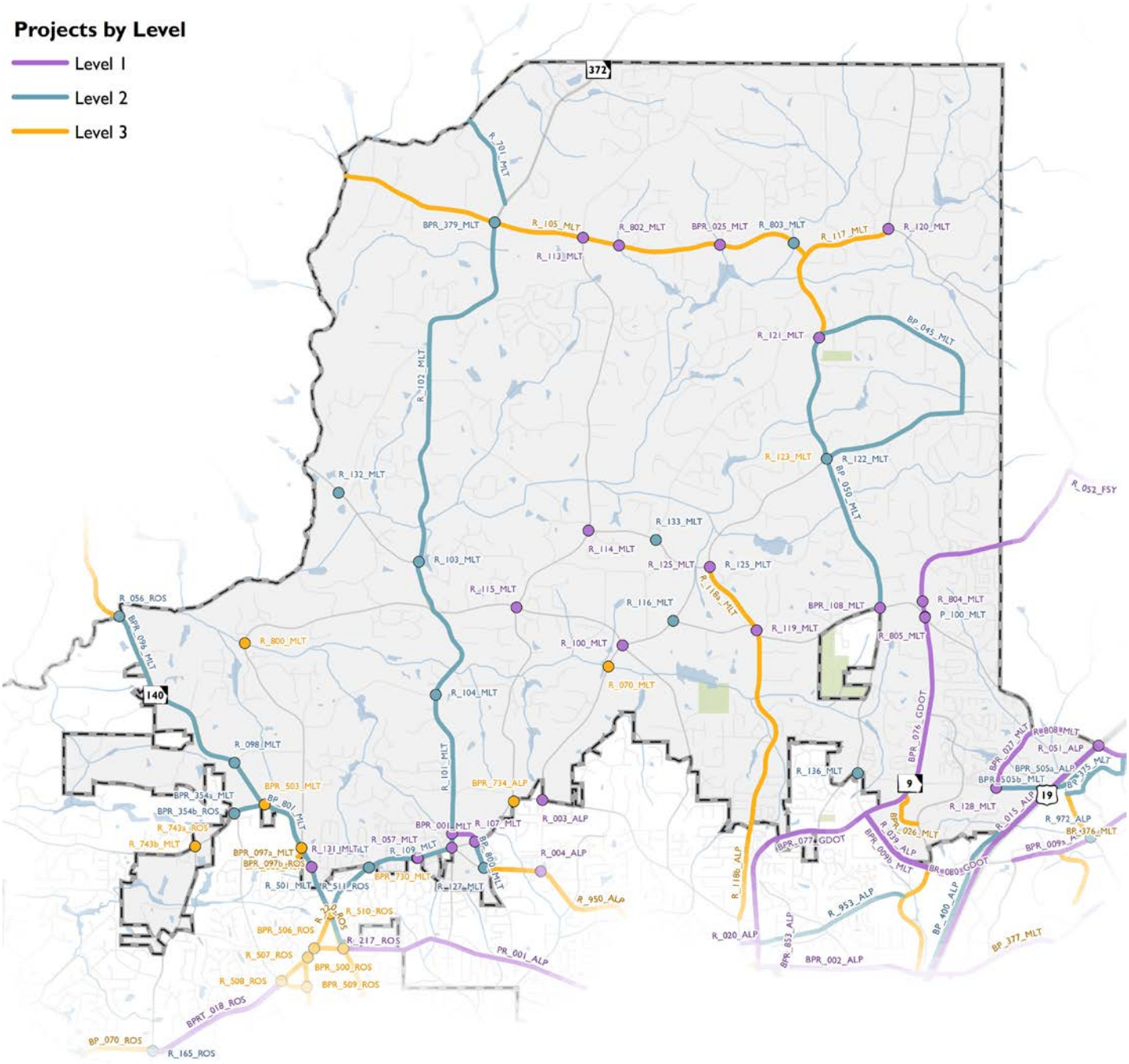
Alpharetta Projects by Funding Level



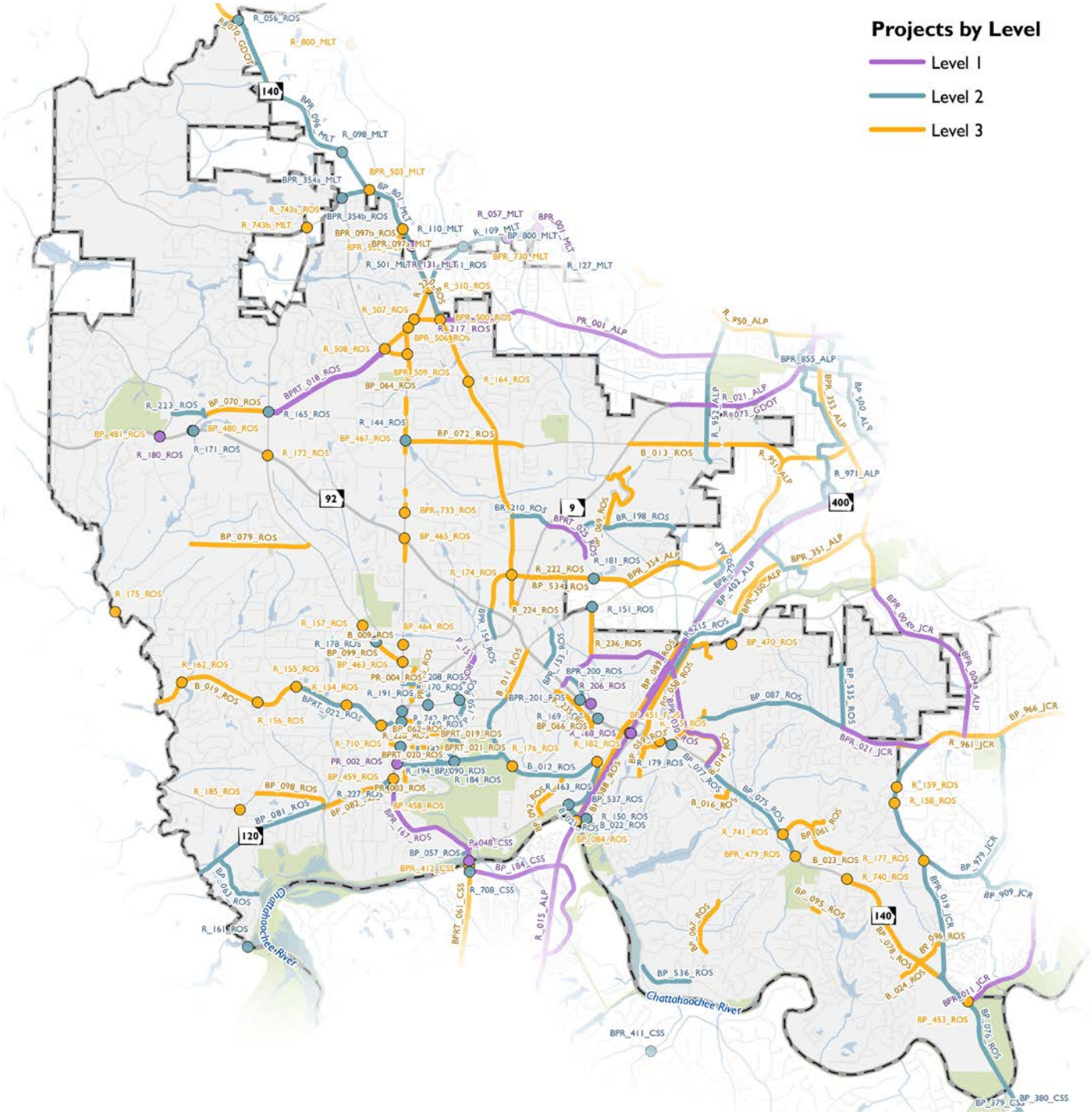
Johns Creek Projects by Funding Level



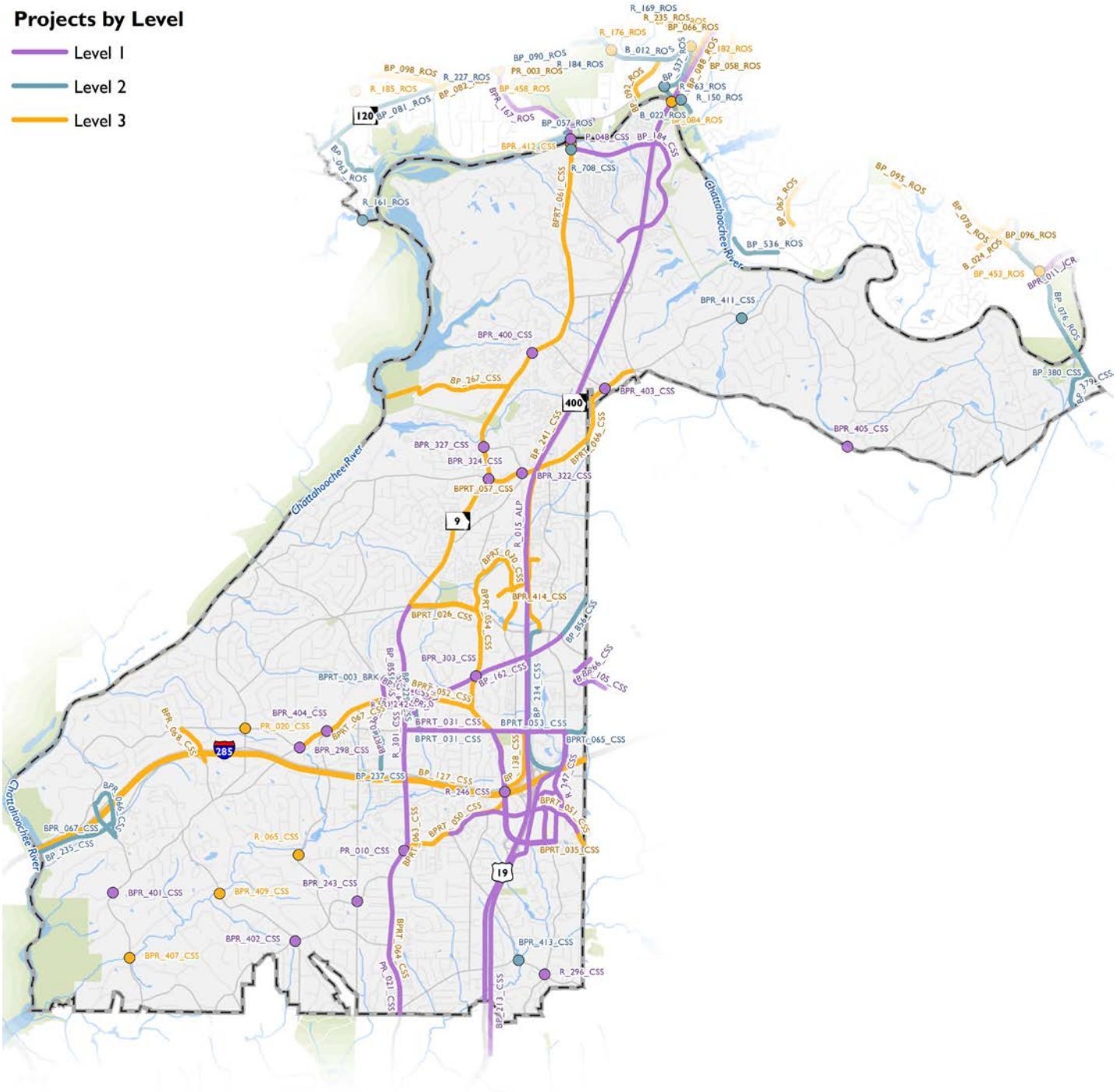
Milton Projects by Funding Level



Roswell Projects by Funding Level



Sandy Springs Projects by Funding Level



7 ACTION PLAN

INTRODUCTION

While a significant portion of the NFCTP is supported by technical analysis, there is an understanding that transportation is a supportive objective that affects a broad range of community and regional initiatives. These strategies are tied to the goals of the plan—environment, economic vitality, and quality of life (Chapter 2). For this reason, continued and improved coordination between member jurisdictions, agencies, non-profits, and advocacy groups becomes a vital component of the plan's path to success. The NFCTP will be regularly updated every five to seven years as the opportunities for coordination of ideas and data continue.
This chapter highlights opportunities for project and policy implementation through continued coordination.

Five-Year Action Plan

The Five-Year Action Plan details projects and policies as well what steps should be taken to move the program implementation forward. The Five-Year Action Plan focuses on Level 1 projects with identified funding sources (i.e., TSPLOST, CIPs, state and regional agency-led projects, bond, etc.). These projects may already be started or in the process of completion within the first five years of the NFCTP.

Next Steps	
Phase	**Action**
Plan Adoption	The NFCTP is adopted by at least five out of the six cities in North Fulton (Alpharetta, Johns Creek, Milton, Mountain Park, Roswell, Sandy Springs).
Inclusion in the Regional and Statewide Transportation Planning Processes	The North Fulton cities work with ARC and GDOT to include projects in the Region's Transportation Plan (RTP) and Transportation Improvement Program (TIP) for inclusion via reference into the State Transportation Improvement Program (STIP).
Performance Monitoring	The North Fulton cities work with ARC and GDOT to jumpstart a performance monitoring plan that aligns with regional, statewide, and federal goals.

Project Recommendations	
Phase	**Action**
Level I Project List	The cities will set aside construction funding and begin coordination with partners to have projects "shovel-ready" as funding is available.
Level 2 and 3 Project Lists	The cities will first undertake concept studies to further define projects and programs identified where applicable. The cities will then identify funding and potential opportunities to begin the preliminary engineering phase during the first five years of the NFCTP.

Policy Recommendations	
Phase	**Action**
Transportation and Land Use	The cities work to identify transportation recommendations that need supportive land use policies. As a part of this process, cities begin to identify partnership opportunities.
Bicycle and Pedestrian	The cities incorporate the bicycle and pedestrian toolkit into their decision-making processes to strategize which alternative transportation elements are appropriate.
Transit	The cities incorporate the results of the Fulton County Transit Master Plan efforts to leverage local interests for a regionally connected system.
Connected and Autonomous Vehicle Policy	The cities prepare for implementation strategies as identified in the Connected and Autonomous Vehicle Toolbox.
Asset Management	The cities develop an asset management database and set aside appropriate amounts of funding for operations and maintenance of existing and new infrastructure.
Bridge Network	The cities work with GDOT to continuously assess bridges throughout the North Fulton area.
Resiliency	The cities continue to consider resilience in the transportation planning process by assessing network vulnerabilities and working with ARC to bring lessons learned through the SHRP-2 grant into local initiatives.
Streetscape and Beautification	The cities coordinate improvements with maintenance schedules while working with planning and zoning departments to leverage local investment.

PERFORMANCE MONITORING PLAN

Coordination

Given North Fulton's fully incorporated status, collaboration and cooperation between the member jurisdictions become a valuable step in achieving effective coordination. The NFCTP planning process included coordination with planning staff from each city jurisdiction as well as local, state, and regional agencies responsible for environmental protection, conservation, economic development, transportation, emergency management, and land use. Coordination between these agencies and the North Fulton cities is recommended to continue beyond the CTP process.

State and Regional Level

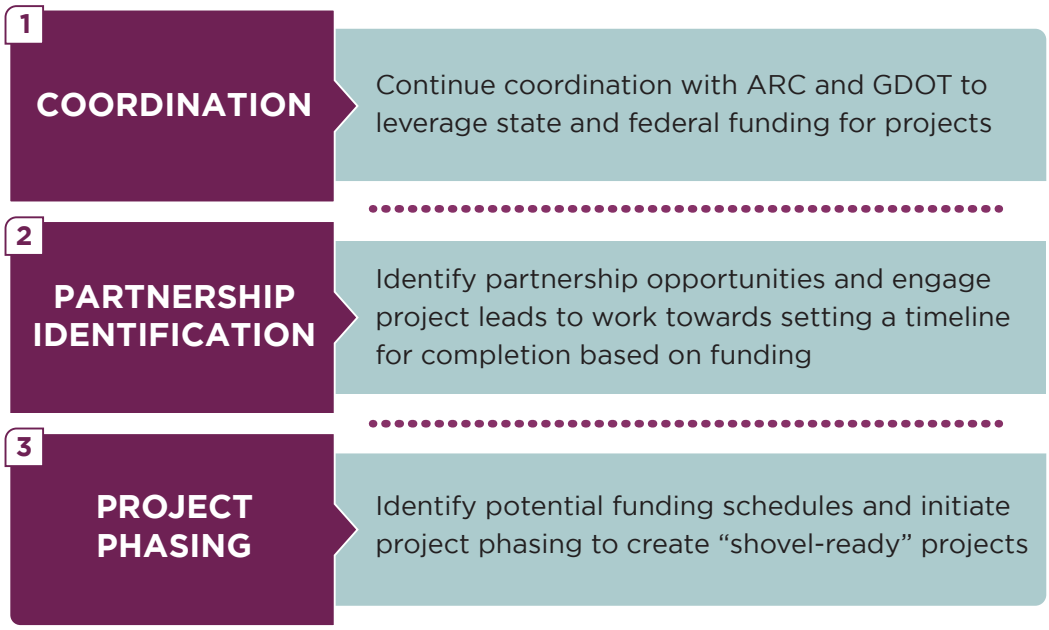
- GDOT - Planning, District 7
- ARC

Local Level

- CIDs
- Chattahoochee Riverkeeper
- Local public and private (K-12) schools
- Secondary education
- Hospital systems
- Local law enforcement agencies
- Local fire departments
- Local emergency management groups
- Trail groups
- Advocacy groups
- Municipal and county administrators
- Local planning department staff
- Local public works staff
- Chambers of commerce

Implementation

The NFCTP recommends using the following steps to move projects into implementation.



Monitoring

Through the federal rulemaking process, FHWA is now requiring state departments of transportation (DOTs) and metropolitan planning organizations (MPOs) to track and monitor highway performance among other modal performance. These performance measures are directly related to the national goal areas that are described in the FAST Act. MPOs can take on additional measures beyond what is outlined, but the following describe the bare minimum:

- **Safety**
- **Infrastructure Condition**
- **System Reliability**
- **Freight Movement and Economic Vitality**
- **Congestion Reduction**

Performance-based planning and programming (PBPP) typically describes the application of performance management as a standard state of practice. The goal is to ensure that transportation investments can meet the established national goal areas. As the state of Georgia sets state targets, ARC will be charged with supporting the state in achieving them. If ARC decides to create supplementary measures and/or targets for the region independent of the federal ones, there may be opportunity to work ARC to aid in measuring and managing performance in their jurisdictions. It is recommended that the North Fulton cities continue coordination with state and regional agencies—like GDOT and ARC—to understand what progress and thus targets are established for performance-based planning and to coordinate on data collection efforts where applicable.

8 ACKNOWLEDGEMENTS

PROJECT MANAGEMENT TEAM

Alpharetta – Eric Graves
Johns Creek – Chris Haggard, Nick Stahl
Milton – Sara Leaders
Roswell – Dave Cox, Mark Dana, Meagan Winchester
Sandy Springs – Kristen Wescott, Ruben Hovanesian
Atlanta Regional Commission (ARC) – David Haynes, Patrick Bradshaw

CITY LEADERSHIP

North Fulton Mayors
Alpharetta City Council
Johns Creek City Council
Milton City Council
Roswell City Council
Sandy Springs City Council

STAKEHOLDER COMMITTEE

City-Appointed Representatives

Alpharetta – McGorrey, Joe
Alpharetta – McIlwanes, John
Alpharetta – Wingate, Frank
Johns Creek – Englert, Joe
Johns Creek – Fleming, Daryl
Johns Creek – Floyd, Chip
Johns Creek – Giannone, Maureen
Johns Creek – Patharkar, Sameer
Milton – Jamison, Peyton
Milton – Johnson, Rich
Roswell – Conaughty, Don
Roswell – Foley, Chris
Roswell – LaDow, Tom
Roswell – Sabatino, Jason
Roswell – Stroud, Steve
Sandy Springs – Clemons, Sherwin
Sandy Springs – Jewell, Sandra, Dr.
Sandy Springs – McDonald, Graham
Sandy Springs – Pond, Al
Sandy Springs – Westmoreland, Van

At-Large Representative Agencies

Atlanta-Fulton County Emergency Management Agency (AFCEMA)
Bicycle Alpharetta
Bicycle Roswell
Chattahoochee River National Recreational Area
Fulton County Division of Aging Services
Fulton County Schools
Georgia Commute Options
Georgia Department of Transportation (GDOT) – District 7
GDOT – Office of Planning
Georgia State University, Perimeter College
Georgia Regional Transportation Authority (GRTA)
Gwinnett Technical College, Alpharetta-North Fulton Campus
Metropolitan Atlanta Rapid Transit Authority (MARTA) Office of Planning
North Fulton Community Improvement District (CID)
Perimeter CIDs
Roswell, Inc.
Sandy Springs/Perimeter Chamber of Commerce
North Fulton Chamber of Commerce

CONSULTANT TEAM

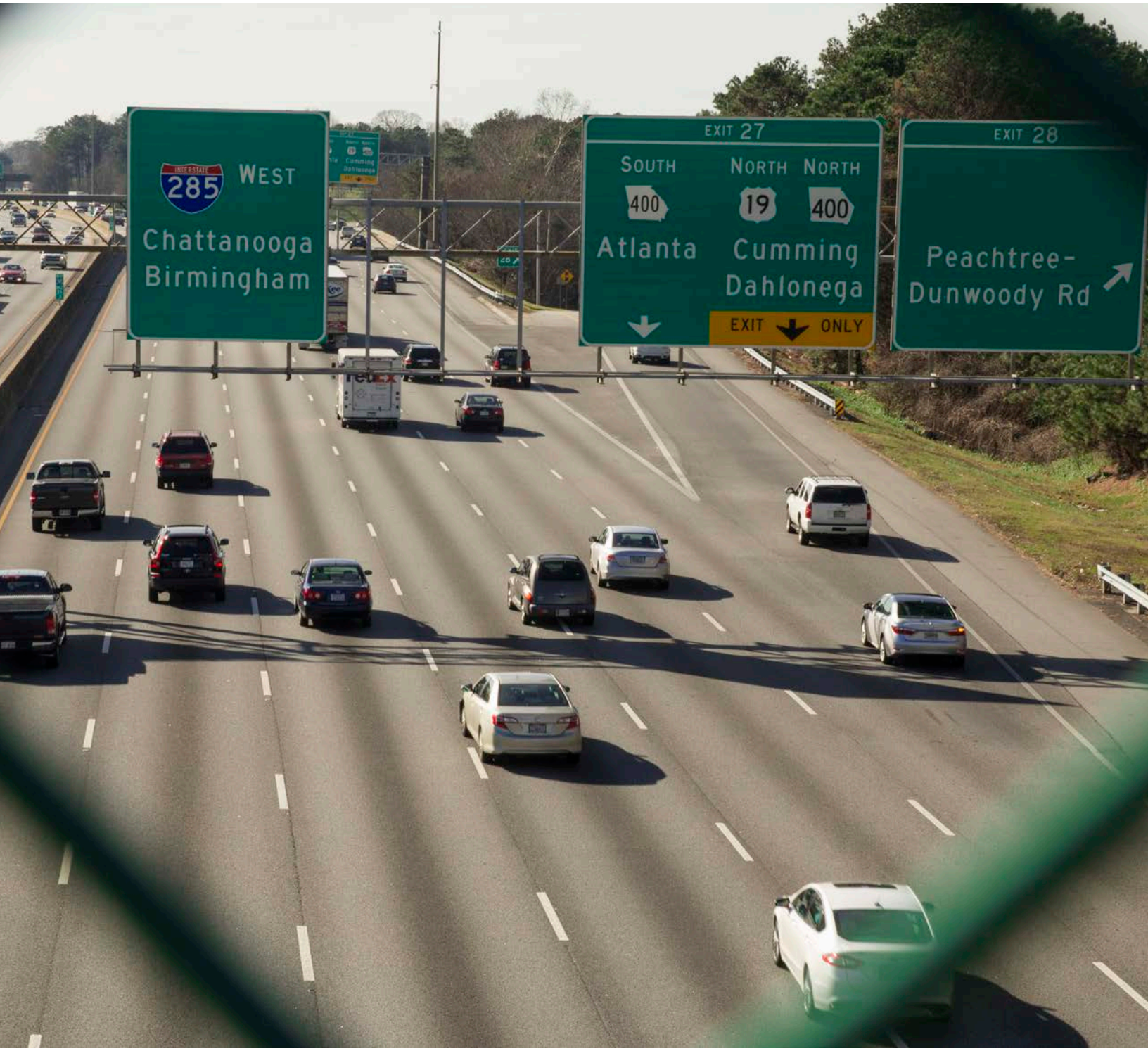
Kimley»Horn

Jacobs
Cambridge Systematics
Perez Planning + Design
Transport Foundry
Debra Semans

9 APPENDIX

CONNECTED AND AUTONOMOUS VEHICLES

The following section include a toolkit of CAV action items that can be taken in the next zero to five years, five to ten years, and beyond 10 years to prepare communities for CAV technology. Each timeframe is presented with a "NOW" and a "FUTURE" list of action items, "NOW" indicates what the North Fulton cities can be doing now to prepare themselves for the given timeframe, where "FUTURE" gives insight to what cities can begin doing to prepare for the next timeframe.



APPENDIX

Project Type		0 - 5 years	
		NOW	FUTURE
TRANSIT	Park and Ride Lots		
	Transit Stops		Consider future impacts of potential design requirements to accommodate AV transit vehicles.
	Vehicle Procurement	Assess the opportunities of testing an automated transit vehicle on a specific route.	Consider the current state of the CAV technology and impacts on vehicle requirements.
	Transit Signal Priority		Consider the impacts of connected vehicle technology.
	Route Revisions / Expansions	Assess the potential for a test project to evaluate a specific existing route to determine the benefits of the operation an automated transit vehicle.	Consider the opportunity for dedicated AV routes/lanes on major arterials.
	Transit Crowdsourcing		Consider dynamic routing and agility in transit stops in response to real time ridership needs.

Project Type		5 - 10 years	
		NOW	FUTURE
TRANSIT	Park and Ride Lots	Assess capacity needs of new lots based on last mile solutions. Potential to partner with fleet companies to lease excess capacity in existing lots.	
	Transit Stops	Define an enforcement strategy for onboarding of nonpaying passengers. Consider design requirements to accommodate AV transit vehicles. Assess design considerations for docking of AV at stops."	Assess the need for each of the defined stops (is transit migrating to become more demand responsive?) Assess the ability to address ADA requirements for AV.
	Vehicle Procurement	Assess the current state of the CAV technology and revise vehicle requirements accordingly. Assess the vehicle size requirement in response to changing demand. Confirm transit AV will integrate with existing stops.	Consider future technology enhancements to accommodate two-way communications with dispatch. Consider the shift from individual vehicle management by a driver to fleet management from dispatch facility.
	Transit Signal Priority	Assess the current state of the CAV technology and revise vehicle requirements.	Consider the availability of system wide signal information and the agility of the transit fleet to reroute.
	Route Revisions / Expansions	Assess the opportunity for dedicated AV routes/lanes on major arterials.	Consider the elimination of certain fixed routes.
	Transit Crowdsourcing	Plan for dynamic routing and agility in transit stops in response to real time ridership needs.	

APPENDIX

Project Type		>10 years	
		NOW	FUTURE
TRANSIT	Park and Ride Lots	Assess capacity requirements based on fleet composition and public's use of AV.	Examine lot locations with respect to transit fleet operations and potential partnering with fleet companies. Examine individual parking space requirements (could be a mix of space configurations).
	Transit Stops	Refine enforcement strategies for onboarding of nonpaying passengers. Integrate design requirements for AV transit vehicles. Assess design considerations for docking of AV at stops.	Assess the need for each of the defined stops (is transit migrating to become more demand responsive?) Assess the ability to address ADA requirements for AV.
	Vehicle Procurement	Assess the vehicle size requirement in response to changing demand. Assess the need for added security equipment for safety (2-way voice communications to dispatch). Confirm transit AV will integrate with existing stops.	Consider the shift from individual vehicle management by a driver to fleet management from dispatch facility.
	Transit Signal Priority	Assess the current state of the CAV technology and revise vehicle requirements accordingly.	Consider the availability of system wide signal information and the agility of the transit fleet to reroute.
	Route Revisions / Expansions	Assess the opportunity for dedicated AV routes/lanes on major arterials.	Consider the elimination of certain fixed routes.
	Transit Crowdsourcing	Plan for dynamic routing and agility in transit stops in response to real time ridership needs.	

Data Dictionary		
	SPaT	Signal Phase and Timing
	DSRC	Dedicated Short Range Communications
	TOC	Traffic Operations Center
	O&M	Operations and Maintenance
	TWLFTL	Two-Way Left Turn Lane
	HOV	High-Occupancy Vehicle

APPENDIX

Project Type		0 - 5 years	
		NOW	FUTURE
VEHICLUAR	Traffic Signals, Signal Timing		Consider preliminary findings and lessons learned from the 2020 SPaT challenge. Consider the potential cost implications of DSRC implementation (capital and O&M). Consider design requirements to enhance detection equipment and controller equipment to collect and broadcast speed/safety information.
	Rail Crossings		Consider the potential to include DSRC equipment to broadcast the current state of at grade crossings.
	New roadways / Roadway widening		Consider accommodation of AV within a mixed fleet.
	Operational Improvements		Consider the safety and mobility impacts of TWLFTL.
	Traffic Calming		Consider newer infrastructure strategies that more effectively communicate changing conditions to AV.
	Parking		Consider implications of converting on-street parking to drop-off lanes. Consider changes to parking requirements for new developments. Consider potential changes in revenue collection technology for parking.

Data Dictionary		
	SPaT	Signal Phase and Timing
	DSRC	Dedicated Short Range Communications
	TOC	Traffic Operations Center
	O&M	Operations and Maintenance
	TWLFTL	Two-Way Left Turn Lane
	HOV	High-Occupancy Vehicle

Project Type		5 - 10 years	
		NOW	FUTURE
VEHICLUAR	Traffic Signals, Signal Timing	Assess the applicability and relavance of lessons learned from the 2020 SPaT challenge. Assess the potential cost implications of DSRC implementation (capital and O&M). Assess design requirements to enhance detection equipment and controller equipment to collect and broadcast speed/ safety information.	Consider the volume of data available and the ability of the TOC to apply and enhance operations. Consider the use of connected vehicle data to continuously provide performance data and allow for retiming of signal phasing.
	Rail Crossings	Assess the requirements for including DSRC equipment to broadcast the current state of the at grade crossing.	
	New roadways / Roadway widening	Assess federal or state requirements to support AV within a mixed fleet.	Consider the opportunity of dedicated AV lanes or corridors. Consider current requirements for traffic control measures, signing, and lane striping.
	Operational Improvements	Assess the safety and mobility impacts of TWLFTL.	Consider the impact of unconventional intersections with a mixed fleet. Consider changes to access management strategies.
	Traffic Calming	Integrate newer infrastructure strategies into designs. Assess the impacts based on a localized percentage of AV.	
	Parking	Assess the potential to convert on-street parking to drop-off lanes. Integrate identified changes to parking requirements for new developments. Integrate changes in parking revenue technologies.	Consider the potential to convert off-street parking to other purposes. Consider design elements that allow easier repurposing for larger parking structures.

APPENDIX

Project Type		>10 years	
		NOW	FUTURE
VEHICLUAR	Traffic Signals, Signal Timing	Assess the impacts on signal design and phasing. Assess the impacts on signal warrants for an individual traffic signal.	
	Rail Crossings	Assess the requirements for including DSRC equipment to broadcast the current state of the at grade crossing.	
	New roadways / Roadway widening	Assess the design requirements to provide dedicated AV lanes or corridors. Assess design requirements necessary to provide standard traffic control measures, signing, and lane striping.	Consider the potential for narrower lanes on AV dedicated facilities.
	Operational Improvements	Assess the impact of unconventional intersections with a mixed fleet. Integrate changes to access management strategies in policies and guidelines.	Consider additional unconventional intersections based on an increase in the percentage of AV within the fleet.
	Traffic Calming		Consider the need for phyiscal traffic calming infrastructure with an increased percentage of AV within the fleet.
	Parking	Assess the potential to convert off-street parking to other purposes. Revise design for larger parking structures to more easily allow repurposing in part or as a whole. Integrate identified changes to parking requirements for new developments. Integrate changes in parking revenue technologies.	Consider changes in local policies and procedures that reflect current trends in parking demand.

APPENDIX

Project Type		0 - 5 years	
		NOW	FUTURE
ATMS	CCTV Camera		Consider additional coverage at major interchanges to monitor the performance of a mixed fleet.
	Communications		Consider bandwidth requirements to accommodate data collection and distribution via DSRC. Consider enhanced security requirements for data sharing. Consider methods of distribution of data made available from DSRC.
	Connected Vehicles		Consider current data available within an agency and strategies to share with CV.
BICYCLE AND PEDESTRIAN	Sidewalks	Assess pedestrian/Bicycle accessibility and safety impacts with CAV technology. Assess current initiatives related to ADA requirements with respect to AV.	Consider introducing CV technology with smart sidewalk technology. (i.e. smart canes)
	Greenways		Consider impacts of greenway crossings on surface streets.
	Bikeways		Consider the design impacts to bikelanes as AV's are introduced into the fleet. Consider additional education and outreach programs designed for both bicyclists and motorists.

Data Dictionary	
SPaT	Signal Phase and Timing
DSRC	Dedicated Short Range Communications
TOC	Traffic Operations Center
O&M	Operations and Maintenance
TWLFTL	Two-Way Left Turn Lane
HOV	High-Occupancy Vehicle

APPENDIX

Project Type		5 - 10 years	
		NOW	FUTURE
ATMS	CCTV Camera		Consider changes in surveillance strategies based on a mixed fleet.
	Communications	Assess bandwidth requirements to accommodate data collection and distribution via DSRC. Assess enhanced security requirements. Assess methods of distribution of data made available from DSRC.	Consider enhancements to communication infrastructure based on technology changes.
	Connected Vehicles	Assess current data available within an agency and strategies to share with CV.	Consider an agency's ability to manage (store, analyze, apply) big data. Consider strategies to collect, process, and apply data collected from CV.
BICYCLE AND PEDESTRIAN	Sidewalks	Assess the ability to accommodate future alternative sidewalk designs, such as drop-off lanes.	Consider introducing CV technology with smart sidewalk technology. (i.e. complete streets, ped/Bicycle detectors)
	Greenways	Assess impacts of greenways crossings and interactions with AV on surface streets.	
	Bikeways	Assess the design impacts to bikelanes as AV's are introduced into the fleet. Assess additional education and outreach programs designed for both bicyclists and motorists.	Consider the inclusion of exclusion of bikelanes with the design of dedicated AV lanes and facilities.

Data Dictionary	
SPaT	Signal Phase and Timing
DSRC	Dedicated Short Range Communications
TOC	Traffic Operations Center
O&M	Operations and Maintenance
TWLFTL	Two-Way Left Turn Lane
HOV	High-Occupancy Vehicle

APPENDIX

Project Type		>10 years	
		NOW	FUTURE
ATMS	CCTV Camera	Assess changes in SOPs for surveillance of a mixed fleet.	Consider CCTV camera deployment strategies based on enhanced data made available from AVs.
	Communications	Assess changes in design requirements to reflect technology changes in communication infrastructure.	
	Connected Vehicles	Assess an agency's ability to manage (store, analyze, apply) big data. Assess strategies to collect, process, and apply data collected from CV.	Consider an agency's ability to support the required big data infrastructure.
BICYCLE AND PEDESTRIAN	Sidewalks		Consider complete street guidelines for "smart" streets with connected pedestrian/bicycle detectors.
	Greenways	Assess impacts of greenways crossings and interactions with AV on surface streets.	
	Bikeways	Formalize guidelines for the inclusion of exclusion of bikelanes with the design of dedicated AV lanes and facilities.	Consider the design of bikelanes and interaction with narrower dedicated AV lanes.

APPENDIX

Project Type		0 - 5 years	
		NOW	FUTURE
TRAVEL DEMAND MANAGEMENT	Ridesharing (TNC/private)	Assess existing passenger data and study on existing reports of ride-sharing demand, and impacts.	
	Carpooling		
LAND USE	Repurposing of Infrastructure	Assess a potential pilot for new infrastructure or "tactical urbanism" concepts in designated areas.	Consider existing infrastructure features/areas that may be become minimized or obsolete with increasing numbers of AVs. Consider potential funding opportunities and the need to conduct public workshops/ outreach.
	Access Management		Consider the potential for a pilot/ test project to evaluate left turn treatments and access in a challenging built environment.
	Environmental		Consider AVs impacts on noise/ emissions and wildlife.
	Zoning		Consider the future impacts of AV on land development and zoning bylaws.

Data Dictionary		
	SPaT	Signal Phase and Timing
	DSRC	Dedicated Short Range Communications
	TOC	Traffic Operations Center
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	TWLFTL	Two-Way Left Turn Lane
	HOV	High-Occupancy Vehicle

APPENDIX

Project Type		5 - 10 years	
		NOW	FUTURE
TRAVEL DEMAND MANAGEMENT	Ridesharing (TNC/private)	Assess future partnerships with developers or transit agencies.	Consider revising the approach toward facilities for sluglines for AVs. Consider partnerships with developers and transit agencies
	Carpooling	Assess the trends in AV and carpooling and the associated demands on infrastructure.	Consider revisions to carpooling programs and infrastructure based on trends in the cross-section of AV ridership.
LAND USE	Repurposing of Infrastructure	Assess the impacts of reusing space for new infill/public space. Assess potential funding opportunities and conduct public workshops / outreach.	Consider the concept of "temporary" spaces that result from the decreasing need on infrastructure that is non-useful for AVs - focus on support to economic or social benefit.
	Access Management		Consider future impacts in land-use and zoning decisions relating to right-of-way access points, especially for emergency vehicles. (EVAC)
	Environmental		Consider the process and the ability to remove vehicle fuel stations. Consider emission/noise data. Consider studying local ecosystem/ wildlife corridors by major arterials/ highways.
	Zoning	Assess land-use techniques or ordinances that reflect AV technology. Assess updating the process for zoning bylaws for AV technology.	Consider beginning process of amending new land-use zoning ordinances that reflect AV technology - consider shifts in development trends.

APPENDIX

Project Type		>10 years	
		NOW	FUTURE
TRAVEL DEMAND MANAGEMENT	Ridesharing (TNC/private)	Intergrate revised designs for slugline facilities and HOV lanes. Establish partnerships with developers and transit agencies	Consider the impacts of ridesharing facilities.
	Carpooling	Integrate revisions to carpooling programs and infrastructure based on trends in the cross-section of AV ridership.	
LAND USE	Repurposing of Infrastructure	Assess the ability to apply more permanent infrastructure in newly designated areas.	
	Access Management	Assess access points are inclusive toward the needs of AV's and EVAC - reflect in the zoning ordinance	Intergrate accommodative design features that reflect AV technology needs into zoning ordinance and land-use provisions.
	Environmental	Assess remediation techniques for removal of contaminated fuel station lots. Assess the ability to repurpose vehicle fuel stations.	Program for a regional study on how pollution, wildlife, and noise levels have changed.
	Zoning	Assess the current trends related to sprawling and denser development. Assess the type of development attributed (i.e. affordable housing, mixed-use)	Develop a master/regional plan to begin mandating previous space will be allotted to (i.e.parking space to Bicycle sharing space). Review zoning changes and land-use.

Data Dictionary	
SPaT	Signal Phase and Timing
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BICYCLE TOOLKIT

The following pages include a bicycle decision-making toolkit uses three elements to create a high-quality bicycle network. The section also includes typical cross sections that include existing and proposed conditions for streets that can be found in North Fulton.

BICYCLE FACILITY IMPLEMENTATION GUIDELINES

Planning, designing, and implementing high-quality bicycle infrastructure requires the consideration of a variety of different elements – establishing a high-quality bicycle network, considering that target bicycle rider, and identifying the appropriate bicycle facility for the target user. The following bicycle facility implementation guidelines provides considerations for these three elements within the context of one of the transportation priorities identified by residents during the NFCTP-providing Multimodal Options. This transportation priority suggests creating streets that can safely and conveniently accommodate multiple modes of travel and promote an environment where alternative transportation can thrive. Achieving this may require that cities reconsider traditional roadway standards (e.g traditional travel lane widths, posted speeds for major corridors, etc.) to current best practices that facilitate the implementation of truly quality multimodal corridors. Some of the cities already have a policy in place that promotes multimodal enhancements; this toolkit can aid in the decision-making process when deciding what types of facilities are most appropriate.

1. ESTABLISH A HIGH-QUALITY BICYCLE NETWORK

Developing a high-quality bicycle network consider five fundamental elements[1]. Considering these five elements through the design and implementation process will be critical to developing a high-quality bicycle network throughout North Fulton County.

1. COHESION

Cohesion is the most elemental of the five requirements yet also the most challenging. A cohesive network has to consider a user's origin and destination points as well as connections to other bicycle networks. The more points the network connects, the more reliable and usable the network can be and the higher the chance people will use the network.

2. DIRECTNESS

Directness can be viewed in two ways – directness in terms of distance and directness in terms of time.

Distance directness is poviding users with the most direct route as possible from their origin to their destination point. Time directness describes routes that allow users to get to their destination in the least amount of time. This considers the directness of the routes as well as the number of interruptions and detours. The more direct a route can be and the quicker users can get from their origin to their destination, which means the network is both more reliable and usable.

3. SAFETY

Safety can be viewed in five different ways:

1. Avoiding conflicts with crossing traffic;
2. Separating cyclist from vehicles;
3. Reducing speeds at points of conflict;
4. Ensuring recognizable bicycle facility types that bicycle users understand and can use with confidence; and
5. Ensuring the consistent application of appropriate bicycle and vehicular traffic conflict solutions that are appropriate per roadway type.

[1] H. Talens, et al., "Design manual for bicycle traffic" CROW (2007), The Netherlands.

DRAFT

4. COMFORT

Comfort can be viewed in three ways:

1. Preventing traffic nuisance by minimizing encounters between vehicles and bicycles;
2. Finding destinations easily; and
3. Developing a comprehensive network that is intuitive and allows users to create a clear mental map of the network.

5. ATTRACTIVENESS

Attractiveness deals with creating an environment that feels welcoming to users through the use of hardscapes, landscapes, signage and wayfinding, lighting, and amenities.

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2. CONSIDERING THE USER

In addition to understanding the elements of implementing a high-quality bicycle network, it is also important to understand the preferences of existing and potential cyclist. Understanding their preferences associated with safety, comfort, and attractiveness, for example, facilitates that development of bicycle infrastructure that may influence their desire to ride.

According to a study completed by Portland State University[2] , the general population can be organized into four bicycle user groups:

1. STRONG AND FEARLESS

This group represents 1% of the population and describes cyclists who are comfortable sharing the road with vehicles and do not need bicycle lanes.

2. CONFIDENT AND ENTHUSED

This group represents 7% of the population and describes bicyclists who are comfortable riding alongside vehicles but need bicycle lanes.

3. INTERESTED BUT CONCERNED

This group represents 60% of the population and describes users who are interested in biking more but are not very comfortable riding on bicycle lanes, have greater concerns about safety, traffic, and ease, and require protected bicycle infrastructure.

4. NO WAY, NO HOW

This group represents 33% of the population and describes users who are not interested in riding

Based on this study, many agencies and municipalities have focused on developing bicycle infrastructure for the "Interested, But Concerned" group. This group offers the highest potential for increasing the number of people riding bicycles. Their criteria mimics Dutch standards for bicycle traffic facilities acceptable to the mainstream population, which attracts equal male and female shares and has high levels of bicycle use for all age groups[3].

[2] Dill, Jennifer, and Nathan McNeil. "Four Types of Cyclists?." Transportation Research Record: Journal of the Transportation Research Board 2387.1 (2013): 129-138.

[3] John Pucher and Lewis Dijkstra, "Making Walking and Cycling Safer: Lessons from Europe," Transportation Quarterly 54, vol. 3 (2000): 25-50.

3. SELECTING THE APPROPRIATE BICYCLE FACILITY TYPE

Selecting the appropriate bicycle facility type begins by considering the various types of bicycle facilities used by bicyclist. There are four primary types of bicycle facilities:

There are four primary types of bicycle facilities:

1. Neighborhood Greenway/ Shared-Use Street
2. Bicycle Lanes
3. Cycle Tracks
4. Multi-purpose Trails

Variations exist within these four primary types of facilities. The following section provides an overview of these facilities. Additional information can be found in engineer and design reference books such as the Federal Highway Administration (FHWA) Separated Bike Lane Planning and Design Guide and the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide.

1. NEIGHBORHOOD GREENWAY/ SHARED-USE STREET

A **neighborhood greenway** is the most basic bicycle facility type and simplest to implement. It uses minimal traffic control signals and markings to denote that cars and bicyclist share the road. Typically, this is achieved by placing a sharrow marking on the travel lane and adding signs that notify drivers that they are sharing the road with bicyclist. Sidewalks are typically provided for pedestrians.

Shared-use streets are similar to neighborhood greenways in that they use minimal traffic control signals and markings. However, their implementation is much more complicated and costly. Shared-use streets are designed as plazas with pavers and furnishings such as movable tables and chairs, bicycle racks, and potted plants. These elements indicate that the space prioritizes pedestrians and slows car and bicycle speeds by creating uncertainty for drivers and cyclist. Neighborhood greenways and shared-used street conditions are appropriate in low-volume and low-speed streets.

NEIGHBORHOOD GREENWAY
Adanac Street, Vancouver, British Columbia

SHARED-USE STREET
New River Street, Batavia, IL

2. BICYCLE LANE

Next to a neighborhood greenway, a bike lane is the second simplest bicycle facility. It designates a portion of the roadway exclusively for bicycle use. Bike lanes are separated from traffic by striping and pavement markings. Signage is also placed along the roadway to notify drivers of the bike lane. Bike lanes can also be buffered and provide further separation between drivers and bicyclist. A bicycle lane is appropriate in low-medium volume streets.

BUFFERED BICYCLE LANE
First Street, Davis, CA

3. CYCLE TRACKS

Cycle tracks are a relatively new bicycle facility in the United States that has gained popularity during the last ten years. They are bike-only facilities physically separated from automobiles and sidewalks by striping, curbs, planters, bollards, parked cars, and/or other vertical elements. Cycle tracks can be one-way or two-way, and can be at the same level as the roadway or slightly elevated. A cycle track is appropriate for medium-high volume streets.

PROTECTED/ELEVATED ONE-WAY CYCLE TRACK
7th Avenue, Seattle, WA

PROTECTED TWO-WAY CYCLE TRACK
John Portman Boulevard, Atlanta, GA

4. MULTI-PURPOSE TRAILS/ SIDEPATHS

Multi-purpose trails are arguably the most popular bicycle facility. Commonly referred to as sidepaths when they are located along a street and sidewalk, a multi-purpose trail is fully separated from the street and can be shared by bicyclists, pedestrians, rollerbladers, and other non-motorized modes. Multi-purpose trails are appropriate along high volume or high-speed streets. They are typically marked with some type of center line to define travel direction and should ideally have a landscape buffer between the street and the trail.

MULTI-PURPOSE TRAIL
PATH 400, Atlanta, GA

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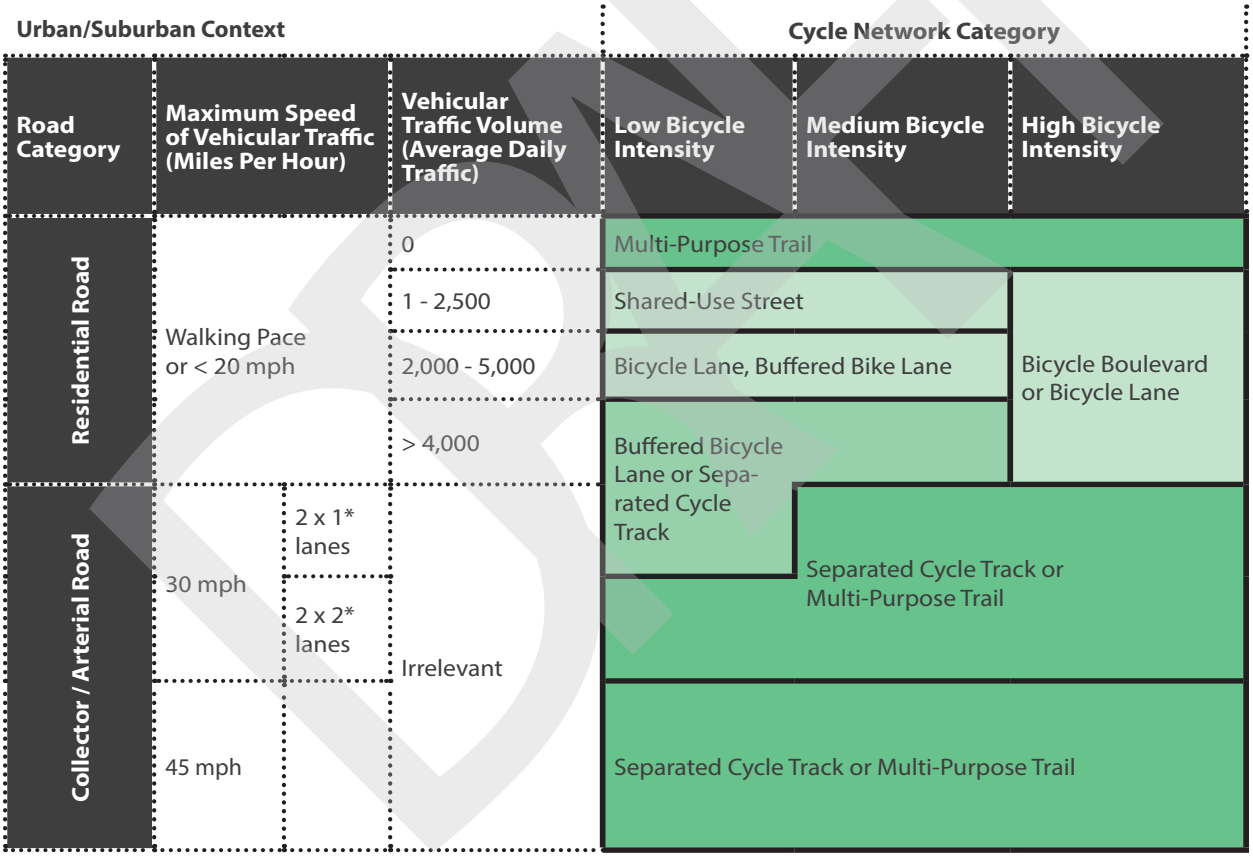
Selecting the appropriate bicycle facility for a specific corridor requires a variety of considerations including targeted bicycle users, roadway characteristics, and applicable engineering standards and guidance.

Roadway characteristics that are typically considered when planning a bicycle network includes type of road, posted speeds measured in miles per hour (MPH), traffic volumes measured in Average Daily Traffic (ADT), and bicycle volume measured in bicycles per day. Other factors to consider may include number of travel lanes, presence of truck traffic, length of the corridor, the number of curb cuts, urban form of the corridor, and adjacent land uses.

Consistent with many cities and agencies across the country, the "Interested, but Concerned" user group described on page 3 was suggested as the appropriate target user for the North Fulton County Comprehensive Transportation Plan Bicycle Facility Implementation Guidelines. This user group offers the County the largest opportunity for increasing the number of people riding bicycles. Their criteria mimics Dutch standards for bicycle traffic facilities acceptable to the mainstream population, which attracts equal male and female shares and has high levels of bicycle use for all age groups[4].

Based on this user group, Figure 1.1 can be used as a starting point for planners and designers to identify which bicycle facilities may be the most appropriate for a specific corridor. It considers road types, posted vehicular traffic speeds, vehicular traffic volumes, and bicycle volumes to suggest appropriate bicycle facilities and is based on the Dutch bicycle facility options diagram for road sections inside the built up-area, such as urban/suburban areas.



Source: Based on the Dutch bicycle facility options diagram for road sections inside the built up-area[5]. Built-up area refers to areas that have a minimum of 30% building density on both sides of the road or 50% on one side of the road, comparable to Urban/Suburan areas in the United States.

*First number refers to the direction of travel, second number refers to the number of lanes in the direction of travel noted in the first number.

FIGURE 1.1
Option Diagram for Bicycle Facillities within Urban/Suburan Areas

[4] John Pucher and Lewis Dijkstra, "Making Walking and Cycling Safer: Lessons from Europe," Transportation Quarterly 54, vol. 3 (2000): 25-50.

[5] H. Talens, et al., "Design manual for bicycle traffic" CROW (2007), The Netherlands.

Figure 1.2 can be used as a starting point for planners and designers to identify which bicycle facilities may be the most appropriate for a specific corridor outside the built up-area, such as rural areas.

Rural Context			Cycle Network Category	
Road Category	**Maximum Speed of Vehicular Traffic (Miles Per Hour)**	**Vehicular Traffic Volume (Average Daily Traffic)**	**Low Bicycle Intensity**	**Medium to High Bicycle Intensity**
Residential Road	35 mph	1 - 2,500	Shared-Use Street	Bicycle Boulevard (If ADT < 500/day)
		2,000 - 3,000	Bicycle Lane, Buffered Bicycle Lane, or Separated Cycle Track	Separated Cycle Track, or perhaps Bicycle Lanes
		> 3,000	Separated Cycle Track	
Collector / Arterial Road	50 mph	Irrelevant	Multi-Purpose Trail	

Source: Based on the Dutch bicycle facility options diagram for road sections inside the built up-area[6]. Built-up area refers to areas that have a minimum of 30% building density on both sides of the road or 50% on one side of the road, comparable to Urban/Suburan areas in the United States.

FIGURE 1.2
Option Diagram for Bicycle Facillities within Rural Areas

It's important to emphasize that these diagrams are a starting point for planners and designers to identify which bicycle facilities may be the most appropriate for a specific corridor. These diagrams are based on three basic premises:

1. The most desirable condition for bicyclist is critical. Most desirable typically refers to the safety and comfort of the bicyclist and the recommendations in the diagram may not always be feasible. If the feasible solution creates a less desirable solution for the cyclist, the designer or planner should find a way to make the solution as bicycle-friendly as possible.
2. Creating bicycle-friendly infrastructure requires the comprehensive consideration of the entire traffic condition, not just only the bicycle facility. That is why the diagram includes road categories, bicycle network categories, vehicular traffic speeds, and vehicular traffic volume.
3. The difference between possible bicycle facilities solutions is not always fixed and often, multiple bicycle facilities solutions exist. The diagram is only a tool for the designer and planner to use to adjust the recommendations to a particular situation.

[5] H. Talens, et al., "Design manual for bicycle traffic" CROW (2007), The Netherlands.

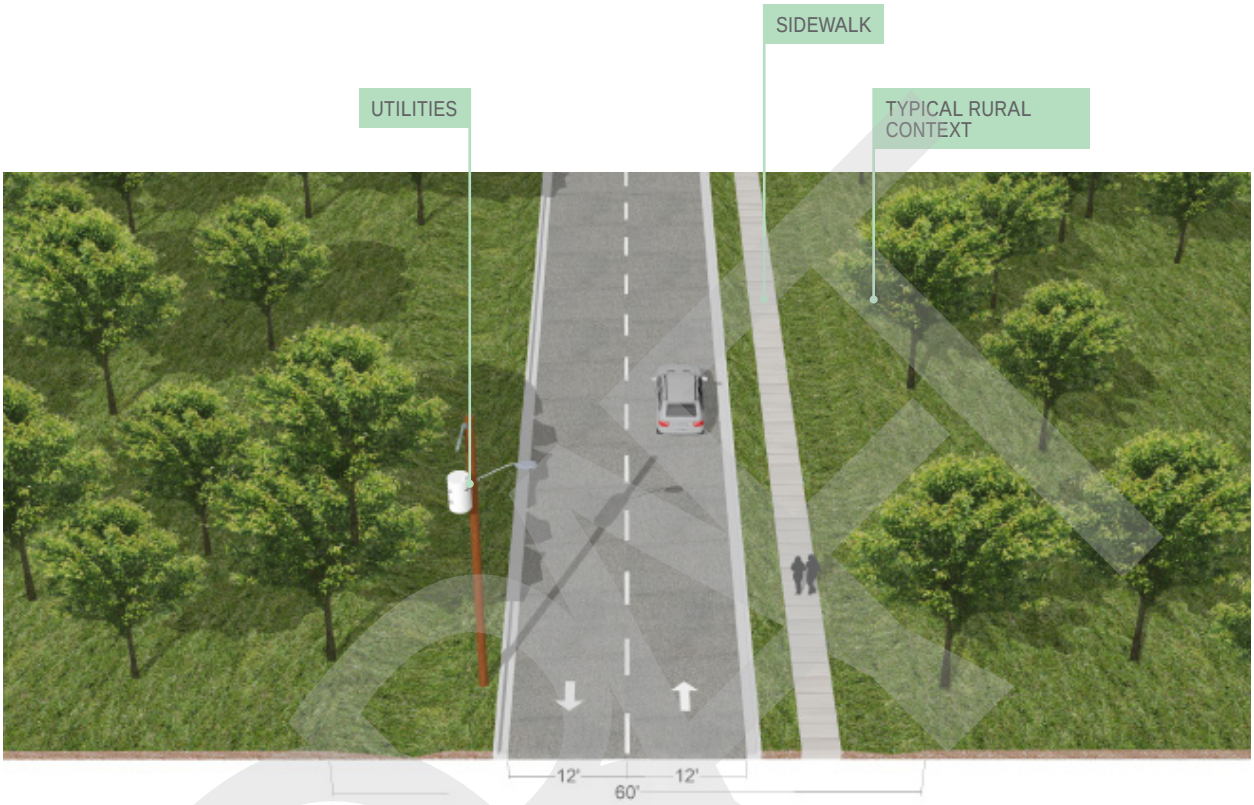
Typical cross sections and intersections were developed for the North Fulton County Comprehensive Transportation Plan that consider the predominant roadway types within the study area's diverse development patterns. The purpose of these typical sections and intersections is to:

1. Test what can be built within the typical public ROW in North Fulton County or built when a roadway is expanded
2. Identify the range of street and intersection designs that can be applied in different types of contexts in the County
3. Illustrate how streets and intersections can be modified to integrate high-quality bicycle facilities that cater to the majority of the population.

It is important to note that these typical cross sections and intersections are intended to only serve as examples for planners and designers of how high-quality bicycle facilities could be implemented in the predominantly roadway types found within the study area. Additional analysis, community input, and design and engineering judgment should be used in the design and engineering of specific projects.

DRAFT

TWO LANE STREET



EXISTING
Typical cross section for a two-lane connector street in a rural area

TYPICAL CONDITIONS

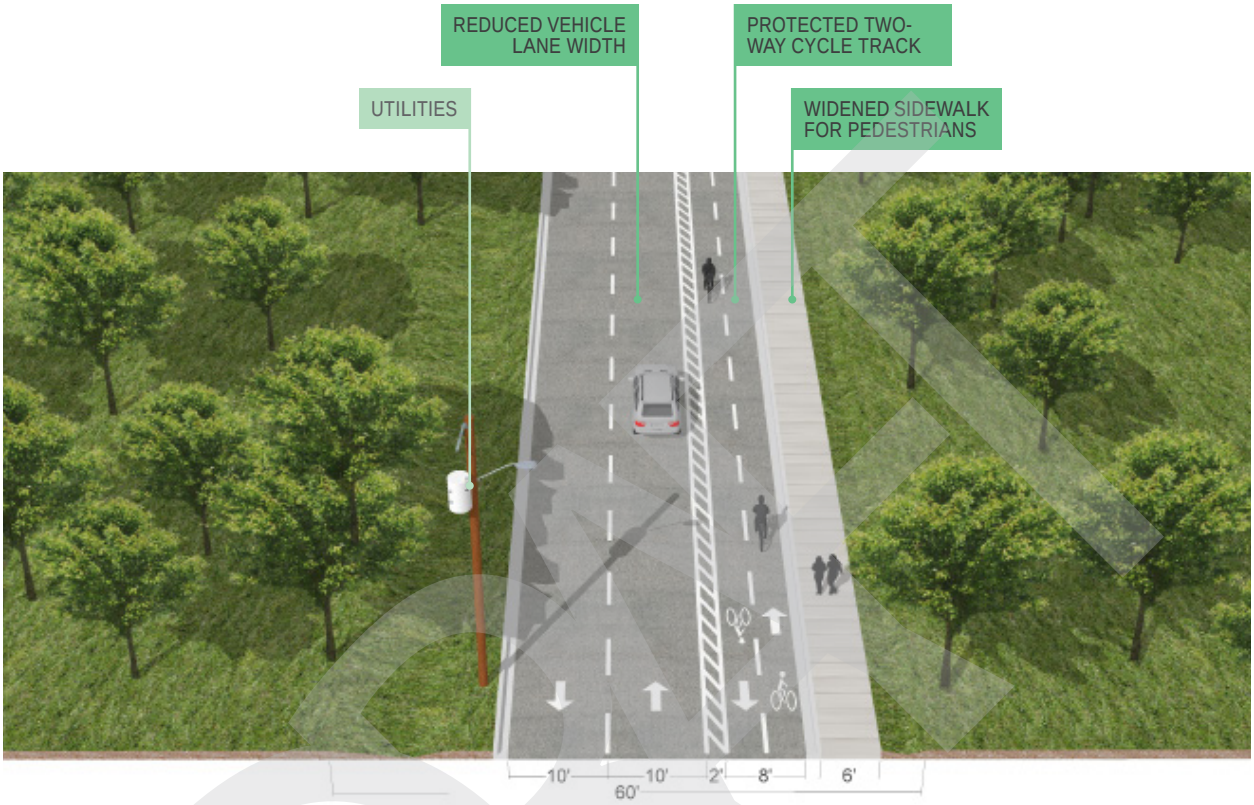
Two-lane connector streets in rural areas typically have a Right-Of-Way (ROW) that varies between 50-60 feet, these roads serve as feeders to the major arterial roads, from low-density neighborhoods.

These streets typically have a narrow sidewalk on one side of the road with a narrow buffer.

EXISTING
Mount Vernon Highway: Typical two-lane connector street

RURAL CONTEXT | PROPOSED OPTION

TWO LANE STREET | SPEED < 30MPH



PROPOSED
Protected two-way cycle track for a two-lane connector street in a rural areas with a speed limit of less than 30mph

PROTECTED TWO-WAY CYCLE TRACK

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.

BIKE FACILITY

- For streets with a speed limit of less than 30 mph, designated two-way cycle track separated from the vehicular lanes by striping with bollards or a curb.

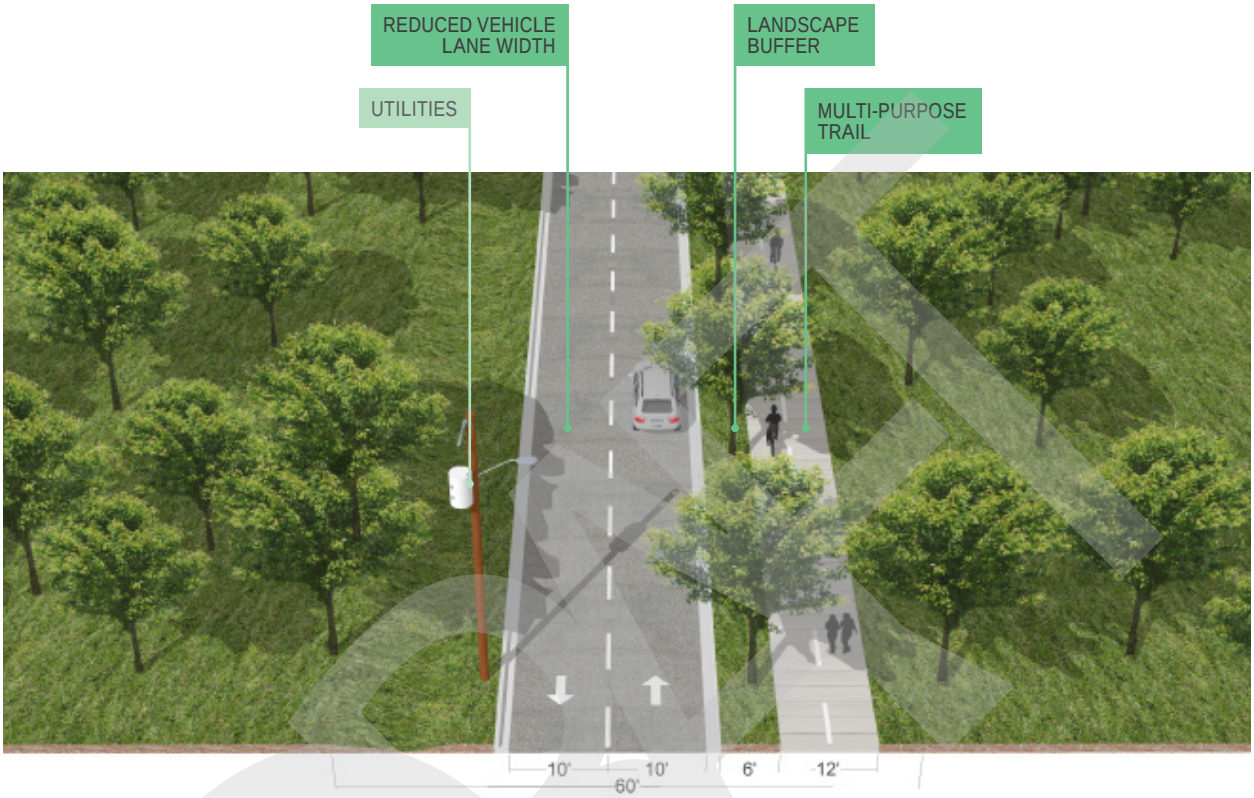
PEDESTRIAN FACILITY

- Paved sidewalk along cycle track.
- Based on edge conditions and availability of space, sidewalk can be built on both sides of road.

RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines, to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired minimum 18 inch wide buffer between vehicular lane and cycle track.
- Minimum 12 feet (8 feet in constrained conditions) wide two-way cycle track.
- Minimum 6 feet wide sidewalk.

TWO LANE STREET | SPEED > 30MPH



PROPOSED
Multi-purpose trail on one side of a two-lane connector street in rural area with a speed limit of more than 30mph

MULTI-PURPOSE TRAIL

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.

BIKE FACILITY

- Multi-purpose trail completely separated from the street with a landscape buffer for streets with a speed limit of more than 30mph.

PEDESTRIAN FACILITY

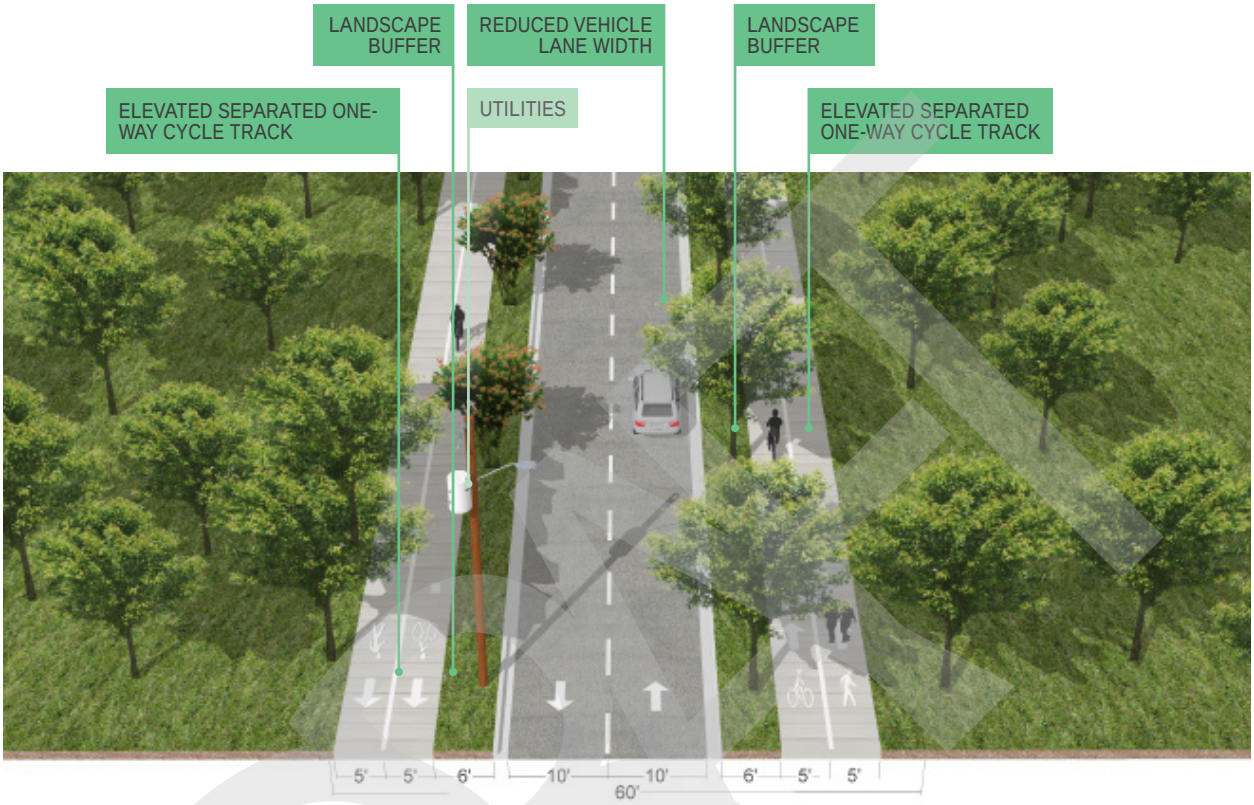
- Multi-purpose trail with center line.

RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines, to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired 6 feet (minimum 4 feet in constrained conditions) wide landscaped buffer between street and trail.
- Minimum 10 feet wide trail.

RURAL CONTEXT | PROPOSED OPTION

TWO LANE STREET | SPEED > 30MPH



PROPOSED
Elevated separated one-way cycle track on either side of two-lane connector street in rural area with a speed limit of more than 30mph

ELEVATED SEPARATED ONE-WAY CYCLE TRACK

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.

BIKE FACILITY

- Elevated one-way cycle track with designated space for cyclists and pedestrians, for streets with a speed limit of more than 30mph and a wider ROW.

PEDESTRIAN FACILITY

- Paved sidewalk with solid center line and markings designating space for pedestrians and cyclists.

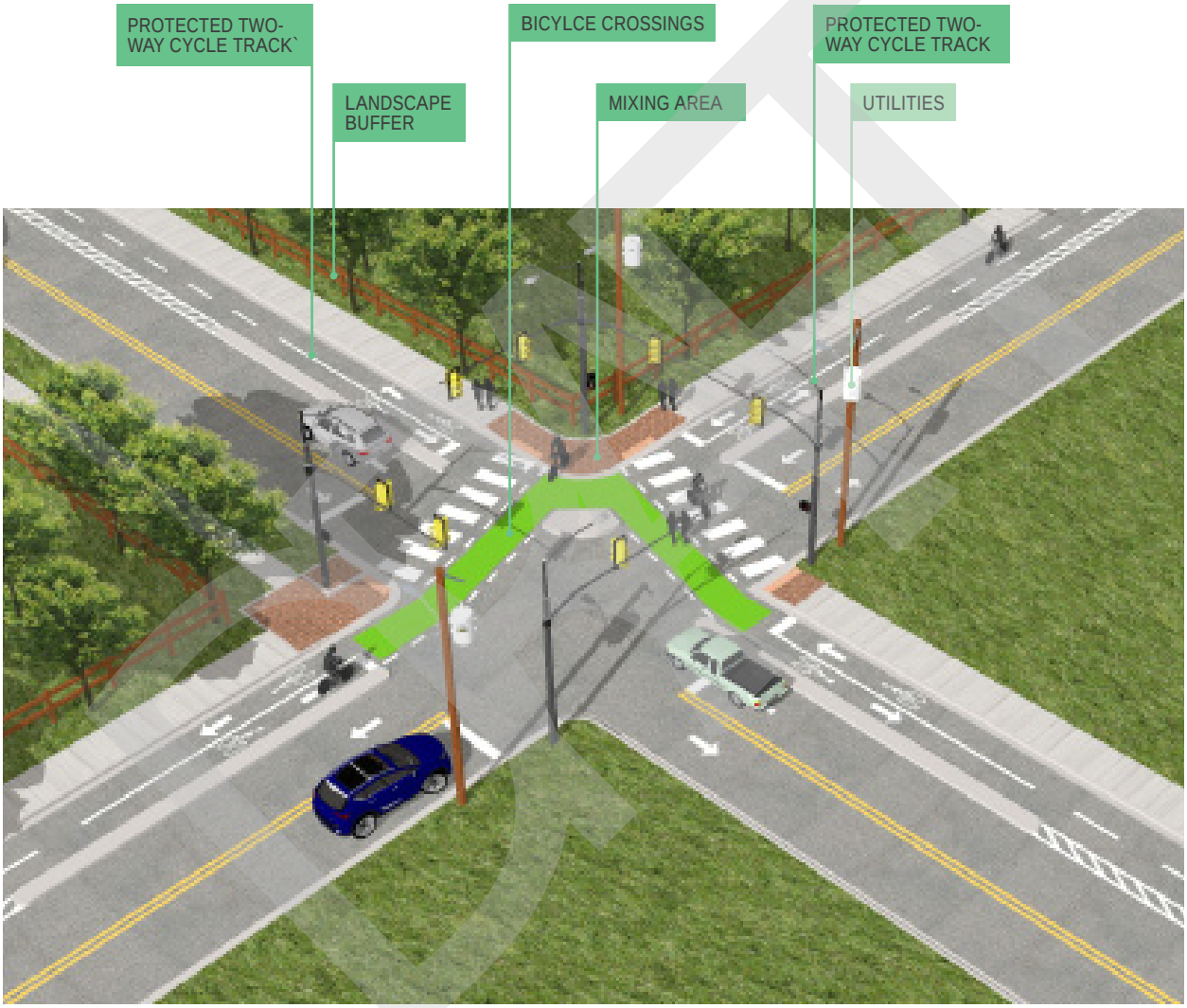
RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines, to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired 6 feet (minimum 4 feet in constrained conditions) wide landscaped buffer between street and trail.
- Minimum 10 feet wide cycle track with 5 feet wide lanes.
- Minimum 5 foot sidewalk with bicycle lane located adjacent to the buffer.

RURAL INTERSECTION | PROPOSED

TWO LANE STREET | TWO LANE STREET

PROTECTED TWO-WAY CYCLE TRACK | PROTECTED TWO-WAY CYCLE TRACK

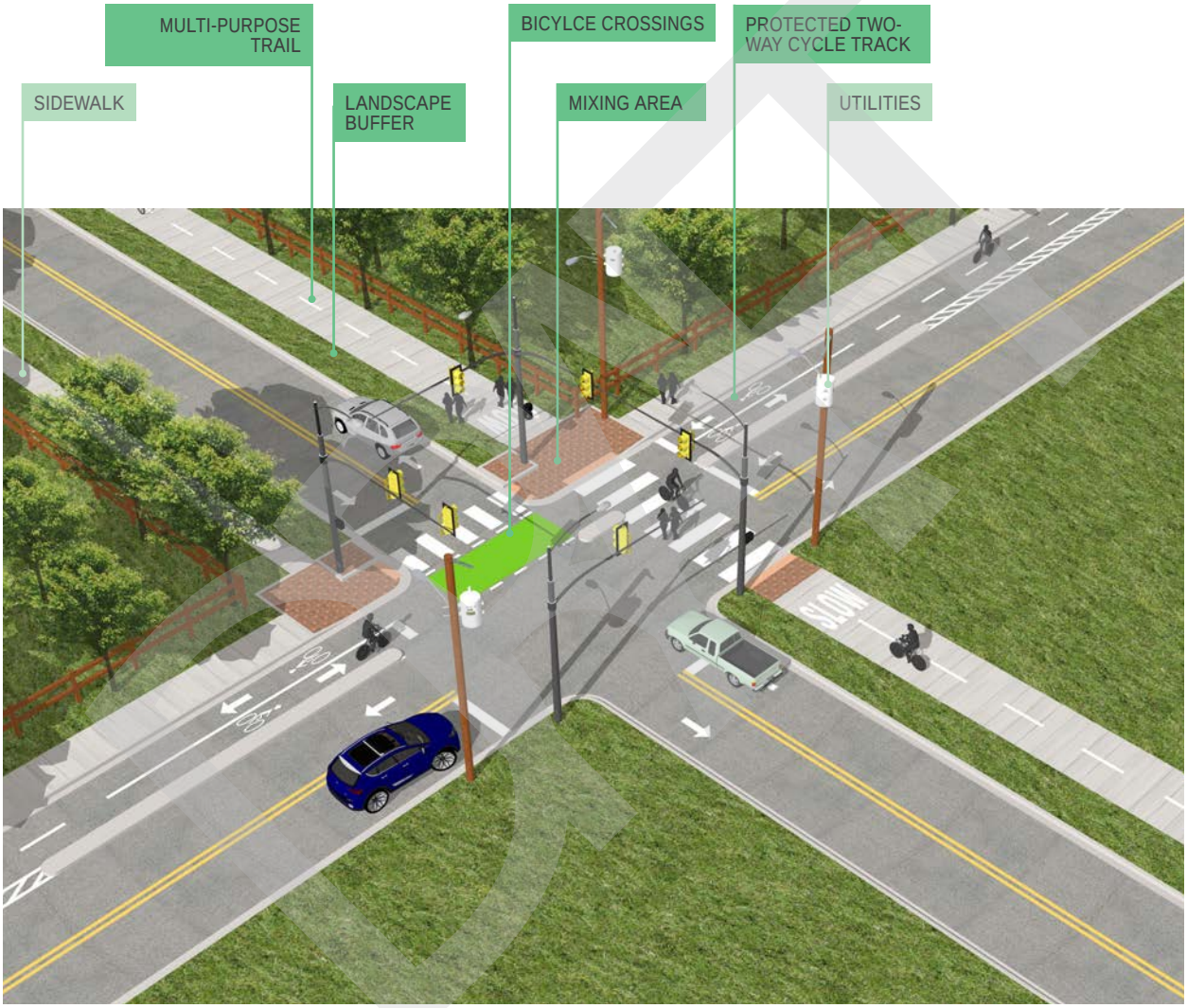


PROPOSED
Protected two-way cycle tracks at a two-lane and two-lane streets intersection

RURAL INTERSECTION | PROPOSED

TWO LANE STREET | TWO LANE STREET

PROTECTED TWO-WAY CYCLE TRACK | MULTI-PURPOSE TRAIL

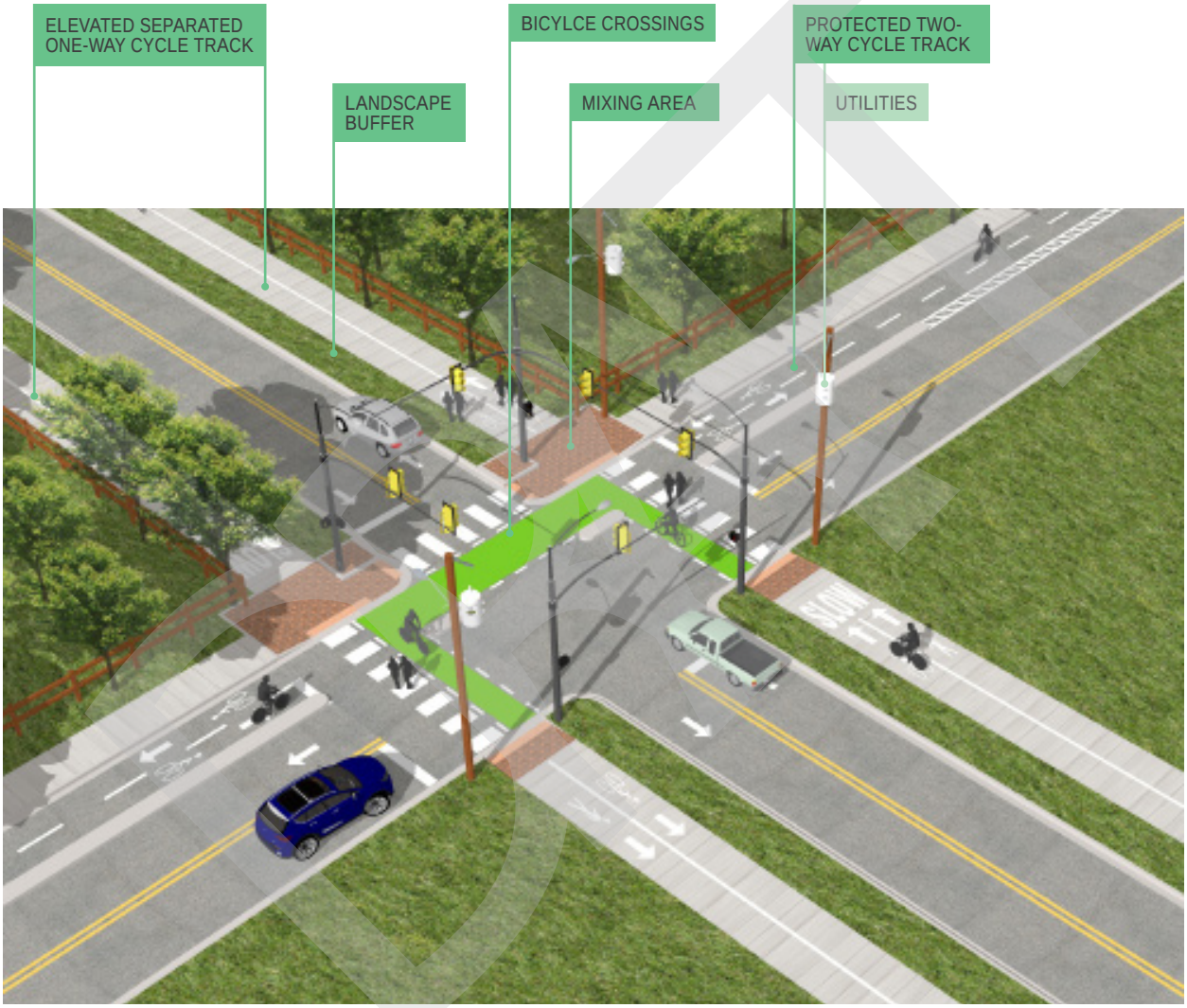


PROPOSED
Protected two-way cycle track and a Multi-purpose trail at a two-lane and two-lane streets intersection

RURAL INTERSECTION | PROPOSED

TWO LANE STREET | TWO LANE STREET

PROTECTED TWO-WAY CYCLE TRACK | ELEVATED SEPARATED ONE-WAY CYCLE TRACK

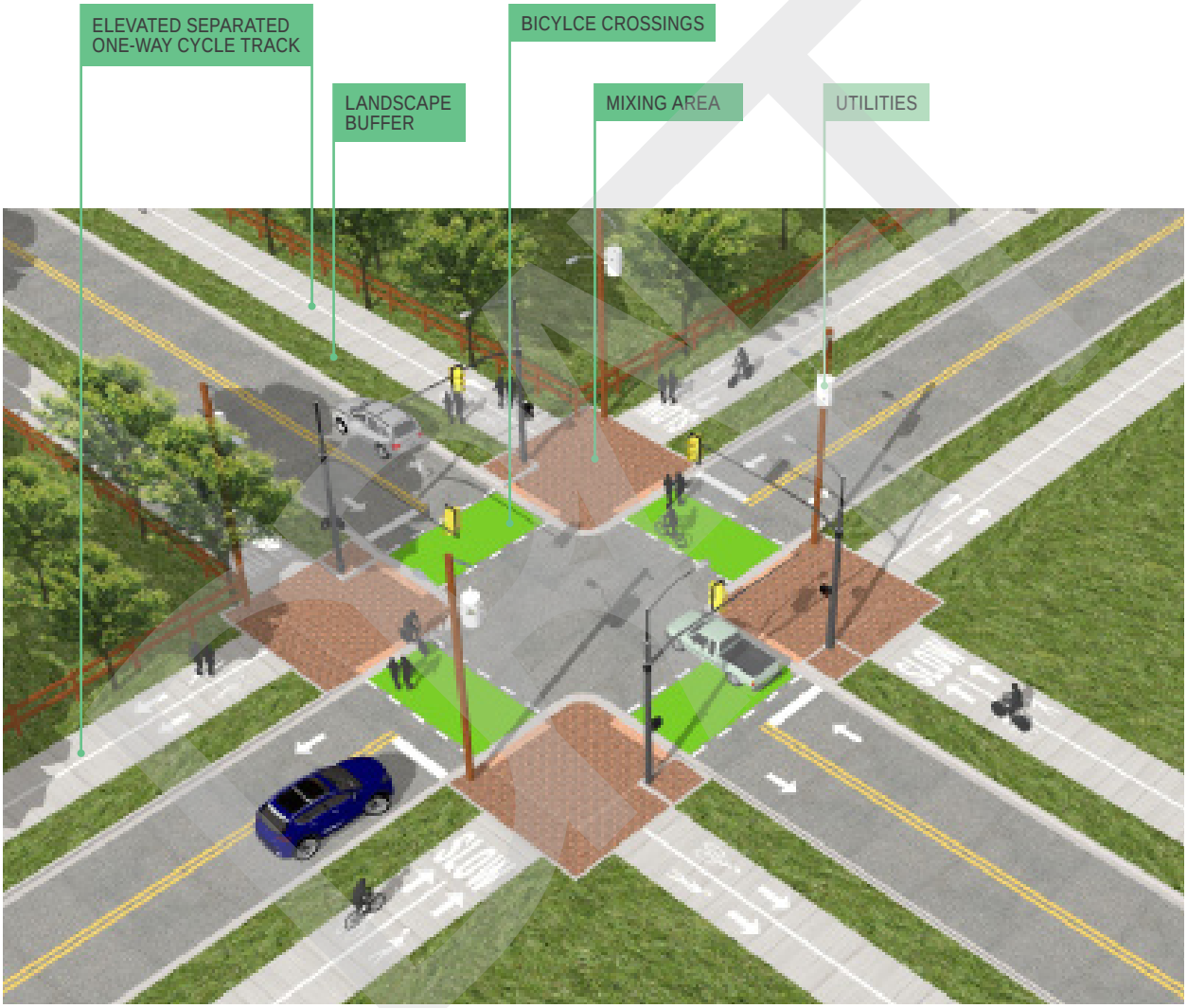


PROPOSED
Protected two-way cycle track and a Elevated separated one-way cycle track at a two-lane and two-lane streets intersection

RURAL INTERSECTION | PROPOSED

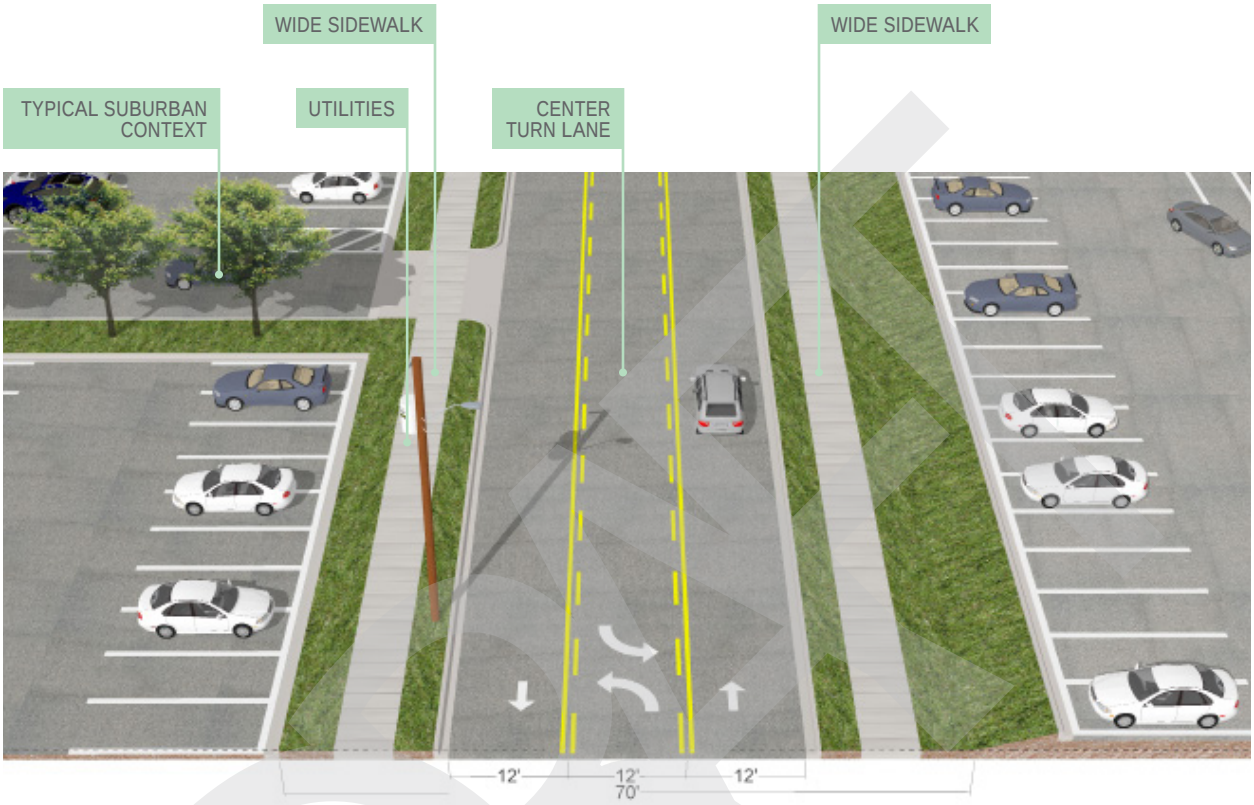
TWO LANE STREET | TWO LANE STREET

ELEVATED SEPARATED ONE-WAY CYCLE TRACK | ELEVATED SEPARATED ONE-WAY CYCLE TRACK



PROPOSED
Elevated separated one-way cycle tracks at a two-lane and two-lane streets intersection

THREE LANE STREET



EXISTING
Typical cross section for a three-lane street in a suburban area

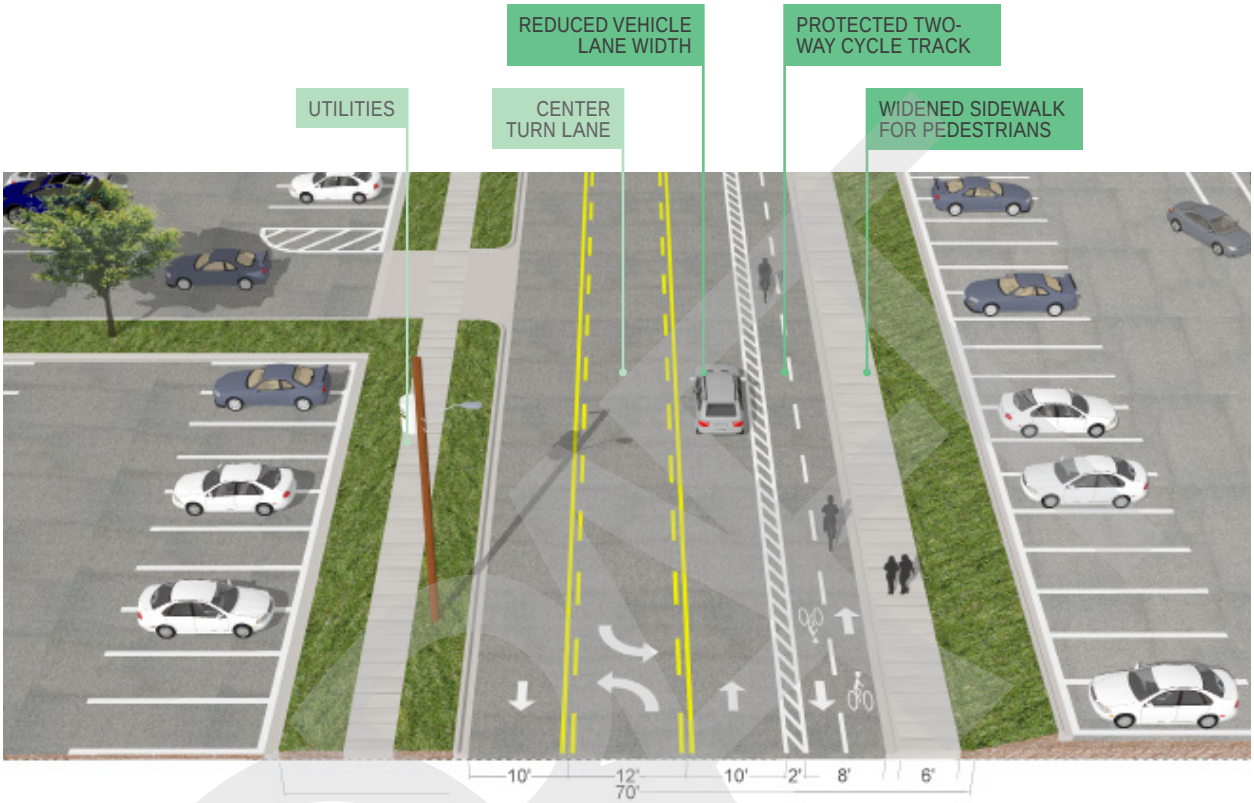
TYPICAL CONDITIONS

Three-lane streets are typically more prevalent in suburban/ urban areas. They usually have wide travel lanes and a center turn-lane. Many of these streets have a sidewalk on both sides of the street with or without a buffer.

EXISTING
Crabapple Road : Typical three-lane street

SUBURBAN CONTEXT | PROPOSED OPTION

THREE LANE STREET | SPEED < 30MPH



PROPOSED
Protected two-way cycle track for a three-lane street in suburban area with a speed limit of less than 30mph

PROTECTED TWO-WAY CYCLE TRACK

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.

BIKE FACILITY

- For streets with a speed limit of less than 30 mph, designated two-way cycle track separated from the vehicular lanes by striping with bollards or a curb.

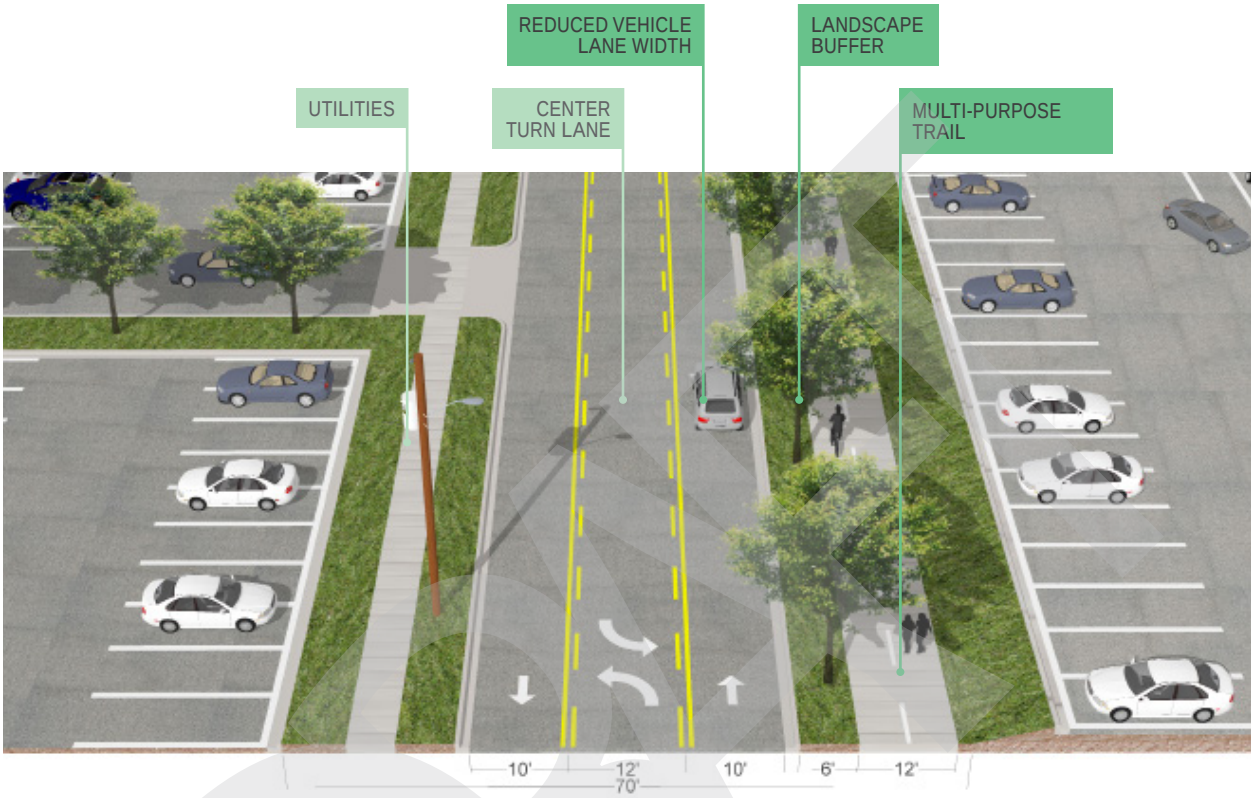
PEDESTRIAN FACILITY

- Paved sidewalk along cycle track.
- Based on edge conditions and availability of space, sidewalk can be built on both sides of road.

RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired minimum 18 inch wide buffer between vehicular lane and cycle track.
- Minimum 12 feet (8 feet in constrained conditions) wide two-way cycle track.
- Minimum 6 feet wide sidewalk.

THREE LANE STREET | SPEED > 30MPH



PROPOSED
Multi-purpose trail on one side of a three-lane street in a suburban area with a speed limit of more than 30mph

MULTI-PURPOSE TRAIL

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.
- Width of center-lane not changed.

BIKE FACILITY

- Based on site conditions, one of the existing sidewalks redesigned as an elevated multi-purpose trail completely separated from the street with a landscape buffer for streets with a speed limit of more than 30mph.

PEDESTRIAN FACILITY

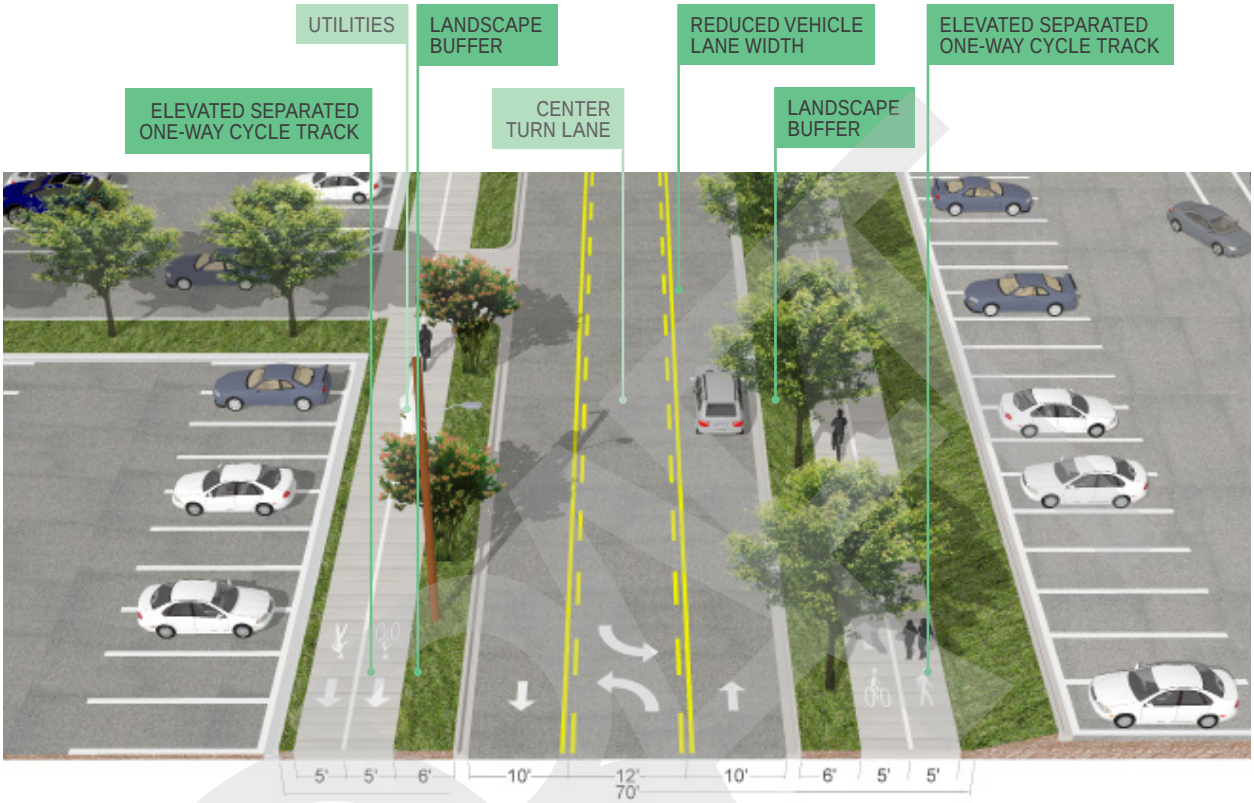
- Multi-purpose trail with center line.

RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired 6 feet (minimum 4 feet in constrained conditions) wide landscaped buffer between street and trail.
- Minimum 10 feet wide trail.

SUBURBAN CONTEXT | PROPOSED OPTION

THREE LANE STREET | SPEED > 30MPH



PROPOSED
Elevated separated one-way cycle track on either side of a three-lane street in a suburban area with a speed limit of more than 30mph

ELEVATED SEPARATED ONE-WAY CYCLE TRACK

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.
- Width of center-lane not changed.

BIKE FACILITY

- Existing sidewalk redesigned as an elevated one-way cycle track with designated space for cyclists and pedestrians, for streets with a speed limit of more than 30mph and a wider ROW.

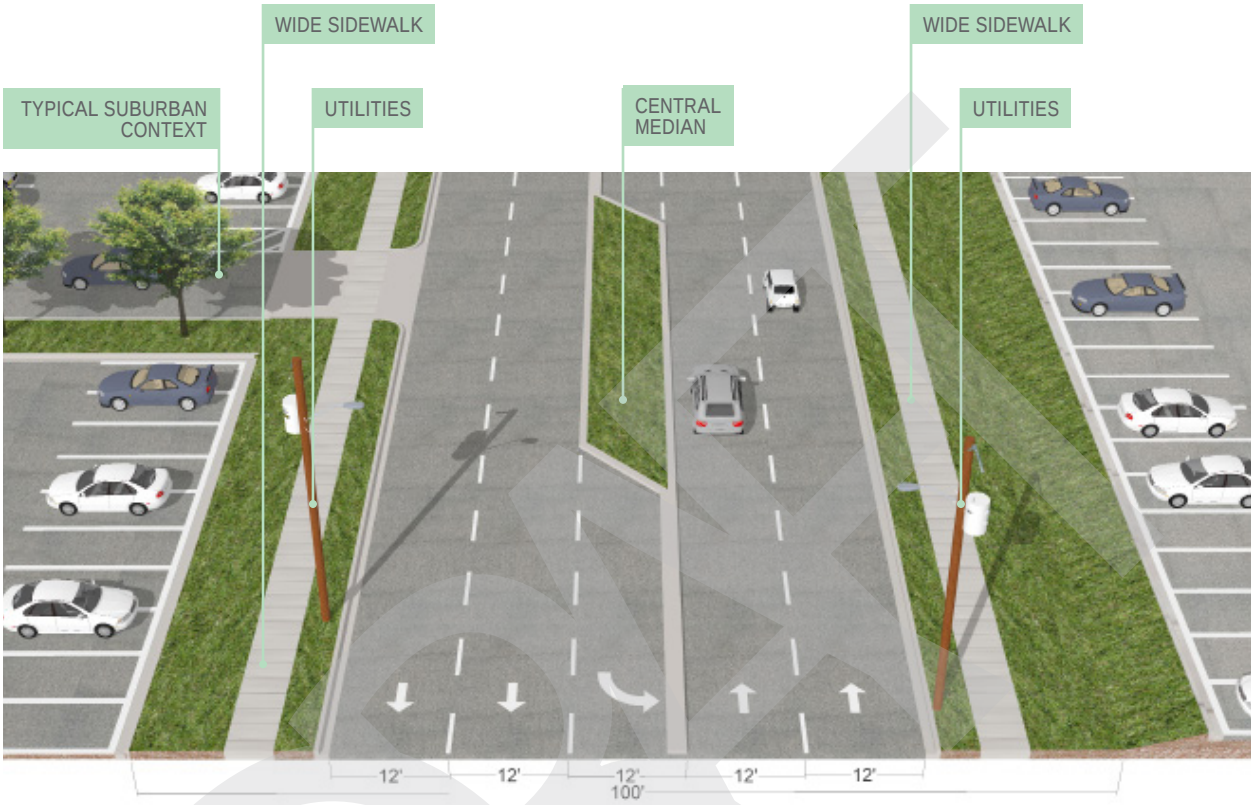
PEDESTRIAN FACILITY

- Paved sidewalk with solid center line and markings designating space for pedestrians and cyclists.

RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired 6 feet (minimum 4 feet in constrained conditions) wide landscaped buffer between street and trail.
- Minimum 10 feet wide cycle track with 5 feet wide lanes.
- Minimum 5 foot sidewalk with bicycle lane located adjacent to the buffer.

FOUR LANE STREET



EXISTING
Typical cross section of a four-lane street in a suburban area

TYPICAL CONDITIONS

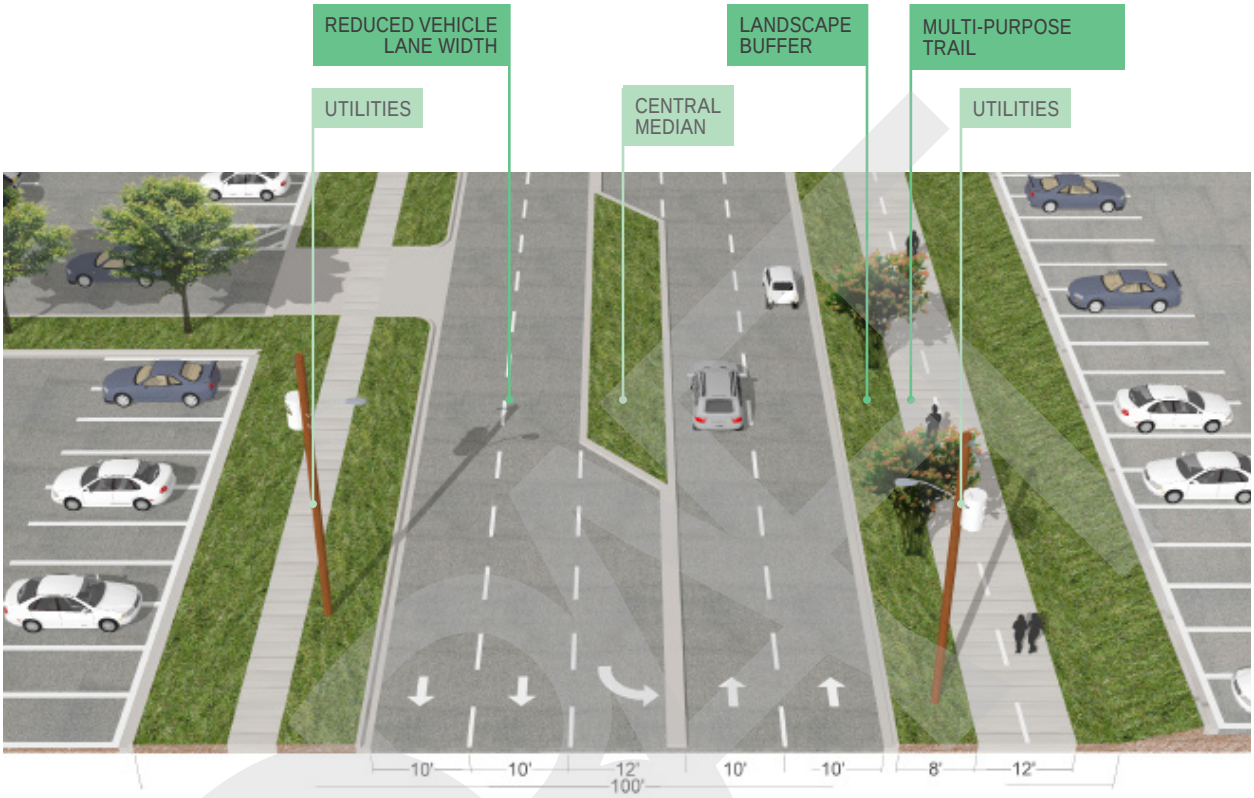
Many of the streets in the study area are four-lanes (or more) wide with a center turn lane or a turn lane with medians (or striping). These collector streets are primarily located in suburban/ urban areas with predominantly commercial land uses.

They typically have a wide sidewalk with a buffer.

EXISTING
Glenridge Drive: Typical four-lane street, with a median in a suburban context

SUBURBAN CONTEXT | PROPOSED OPTION

FOUR LANE STREET



PROPOSED
Multi-purpose trail on one side of four-lane (or more) street

MULTI-PURPOSE TRAIL

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.
- Width of center-lane not changed.

BIKE FACILITY

- Based on site conditions, one of the existing sidewalks redesigned as an elevated multi-purpose trail completely separated from the street with a landscape buffer for streets with a speed limit of more than 30mph.

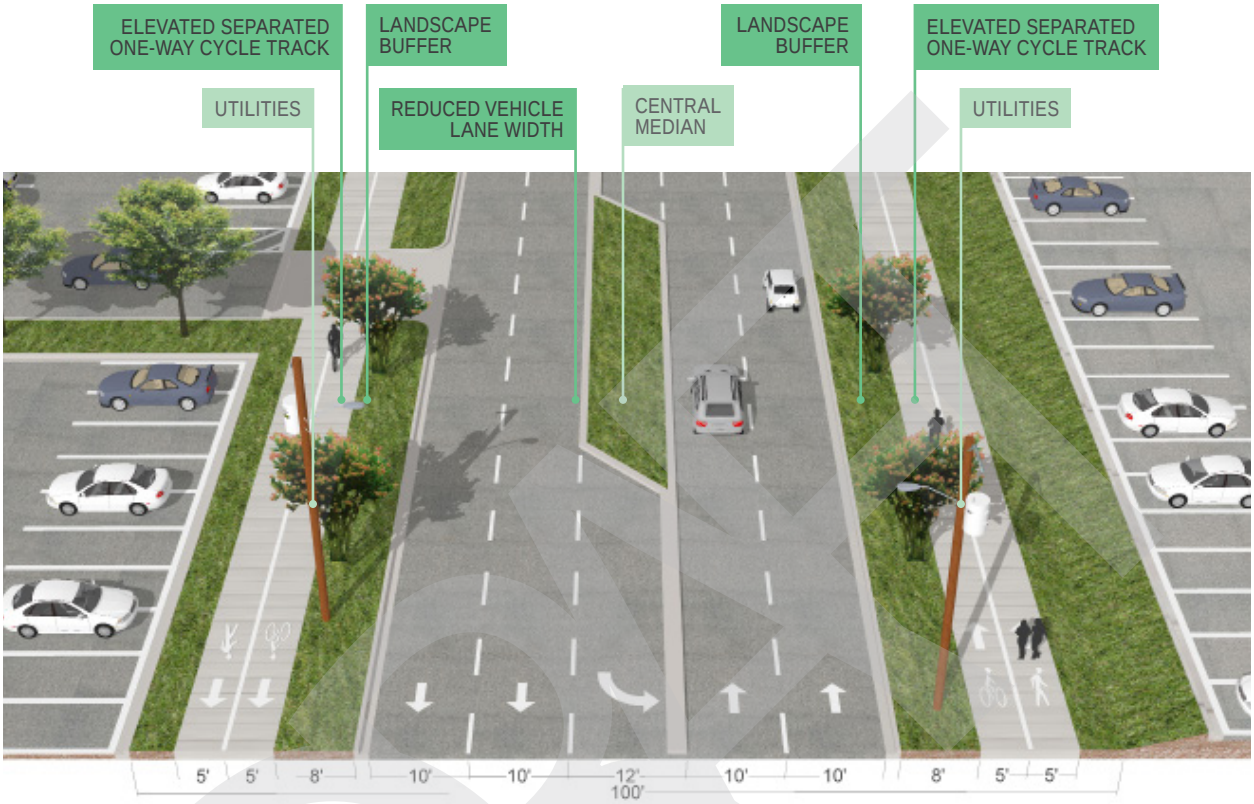
PEDESTRIAN FACILITY

- Multi-purpose trail with center line.

RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired 6 feet (minimum 4 feet in constrained conditions) wide landscaped buffer between street and trail.
- Minimum 10 feet wide trail.

FOUR LANE STREET



PROPOSED
Elevated separated one-way cycle track on either side of four-lane (or more) streets

ELEVATED SEPARATED ONE-WAY CYCLE TRACK

VEHICULAR LANES

- Repurposed roadway space by reducing existing lane widths from 12 feet to 10 feet.
- Width of center-lane not changed.

BIKE FACILITY

- Existing sidewalk redesigned as an elevated one-way cycle track with designated space for cyclists and pedestrians, for streets with a speed limit of more than 30mph and a wider ROW.

PEDESTRIAN FACILITY

- Paved sidewalk with solid center line and markings designating space for pedestrians and cyclists.

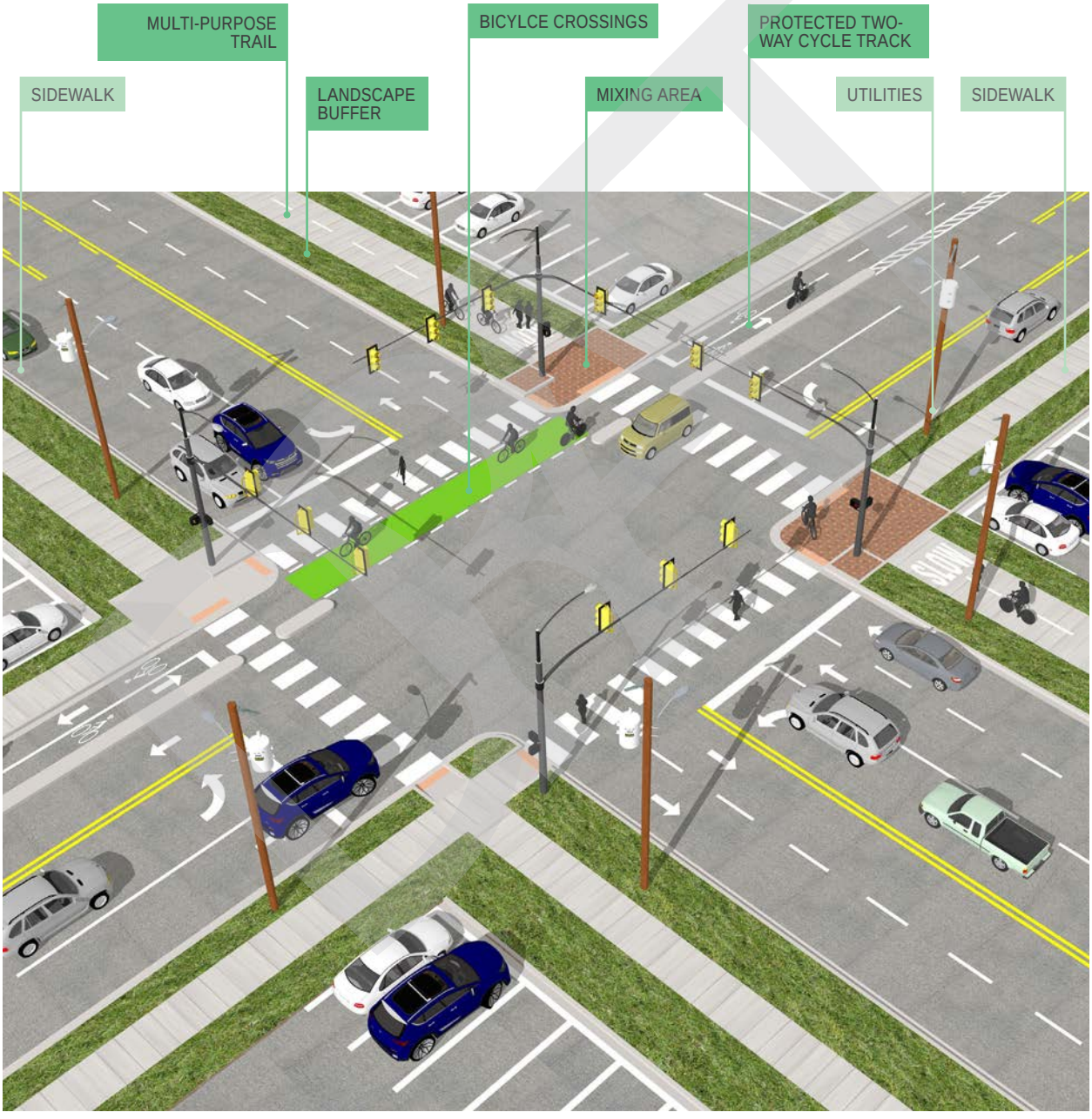
RECOMMENDATIONS

- Desired 10 feet wide lanes
- Location of existing utility/ power lines to be taken into consideration while repurposing the street, and should remain unchanged to incur minimum costs.
- Desired 6 feet (minimum 4 feet in constrained conditions) wide landscaped buffer between street and trail.
- Minimum 10 feet wide cycle track with 5 feet wide lanes.
- Minimum 5 foot sidewalk with bicycle lane located adjacent to the buffer.

SUBURBAN INTERSECTION | PROPOSED

THREE LANE STREET | FOUR LANE STREET

PROTECTED TWO-WAY CYCLE TRACK | MULTI-PURPOSE TRAIL

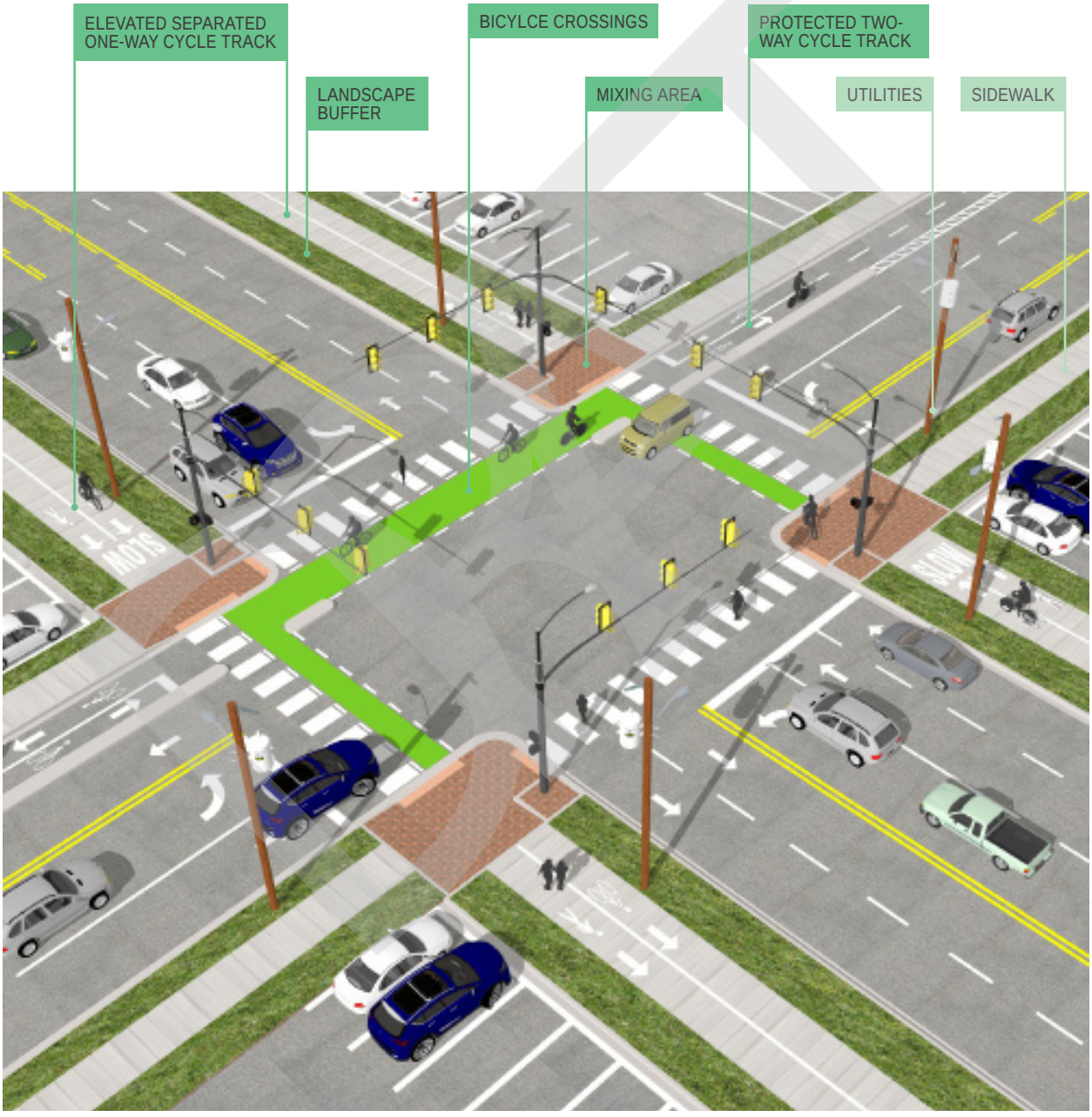


PROPOSED
Protected two-way cycle track and a Multi-purpose trail at a three-lane and four-lane streets intersection

SUBURBAN INTERSECTION | PROPOSED

THREE LANE STREET | FOUR LANE STREET

PROTECTED TWO-WAY CYCLE TRACK | ELEVATED SEPARATED ONE-WAY CYCLE TRACK

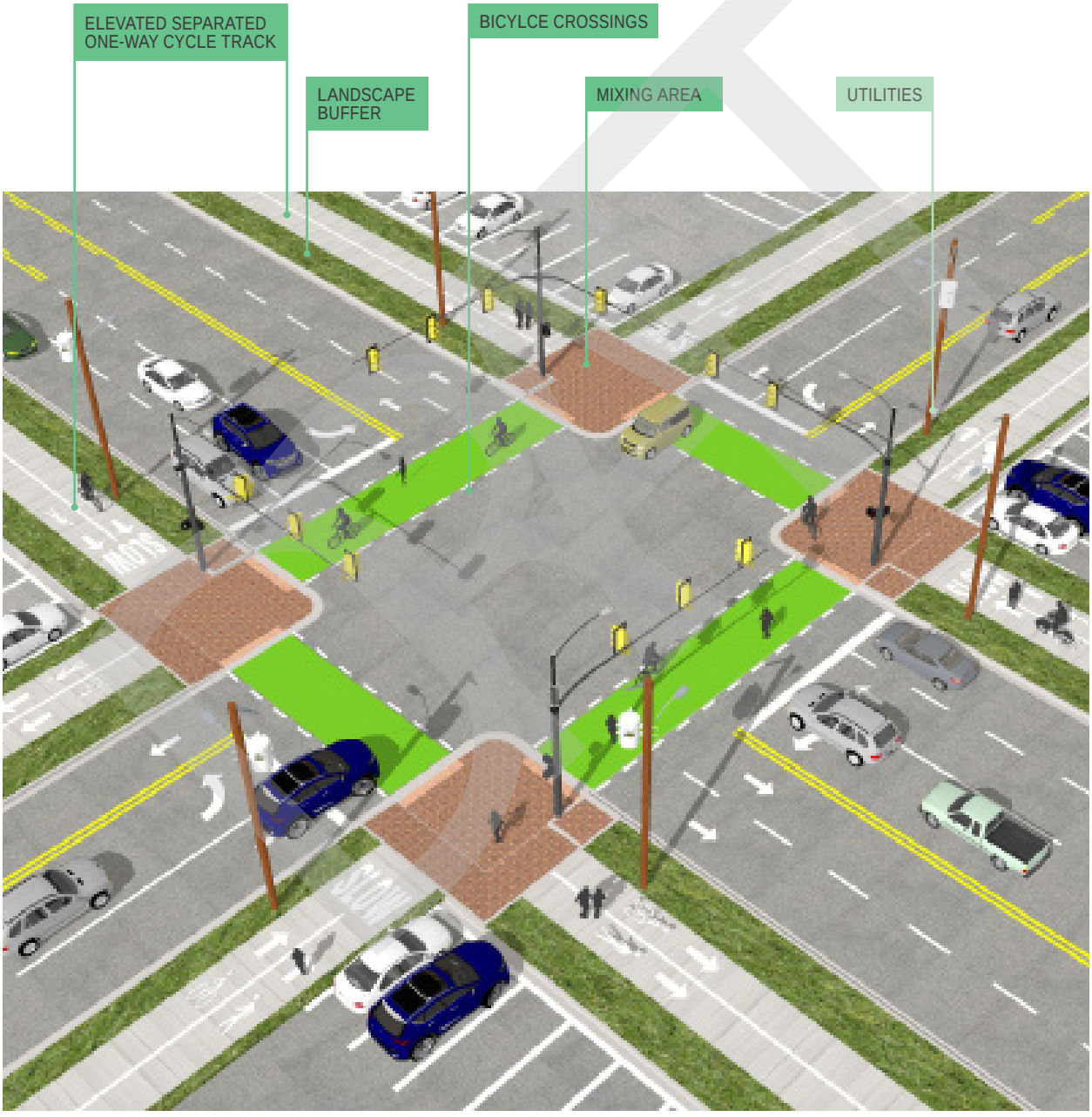


PROPOSED
Protected two-way cycle track and a Elevated separated one-way cycle track at a three-lane and four-lane streets intersection

SUBURBAN INTERSECTION | PROPOSED

THREE LANE STREET | FOUR LANE STREET

ELEVATED SEPARATED ONE-WAY CYCLE TRACK | ELEVATED SEPARATED ONE-WAY CYCLE TRACK



PROPOSED
Elevated separated one-way cycle tracks at a three-lane and four-lane streets intersection

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NORTH FULTON

COMPREHENSIVE TRANSPORTATION PLAN